

Basic Information: Christian David Ott

Nationality German, US permanent resident

Current Appointments **Professor of Theoretical Astrophysics** (tenured)
California Institute of Technology, Pasadena, CA 91125, USA
Since 02/2014.

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Affiliate Member

Kavli Institute for the Mathematics and Physics of the Universe (Kavli IPMU)
University of Tokyo
Since 12/2011.

Current Address Theoretical Astrophysics Including Relativity (TAPIR),
Mail Code 350-17,
California Institute of Technology,
1200 E. California Blvd.
Pasadena, CA 91125, USA

Office Phone: +1-626-395-8410

Fax: +1-626-796-5675

e-mail: cott@tapir.caltech.edu

WWW: <http://www.tapir.caltech.edu/~cott>

Academic Degrees Dr. rer. nat. in Theoretical Astrophysics, Summa Cum Laude, 03/2007.
Universität Potsdam and Max-Planck-Institut für Gravitationsphysik,
Albert-Einstein-Institut (AEI)
Thesis Advisor: Prof. Dr. B. Schutz (Director, AEI)

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Diploma in Physics (1.0, “with distinction”), August 2003
Universität Heidelberg, Institut für Theoretische Astrophysik
Thesis Advisor: Prof. Dr. W. Duschl (now Univ. Kiel)

Awards and Scholarships 2013: **Squire Lecturer**, Grinnell College.
2012: **Alfred P. Sloan Research Fellowship** (2012-2014).
2012: **NSF CAREER Grant** (Gravitational Physics, 2012-2017).
2008: **Otto Hahn Medal 2007** of the Max Planck Society.
2007: Young Scientist Prize of the City of Potsdam.
2001: Elite scholarship of the State of Baden-Württemberg for studies abroad (2001-2002).
1999: German Federal Elite Scholarship through the Villigst center of the German Lutheran Church (1999-2003).

Previous Positions

- Sep. 2009 - Jan. 2014 **Assistant Professor of Theoretical Astrophysics**, California Institute of Technology, Pasadena, CA, USA
- Sep. 2009 - Jan. 2014 **Adjunct Assistant Professor**, Center for Computation and Technology, Louisiana State University, Baton Rouge, LA, USA
- Aug. 2009 - Dec. 2009 **Assistant Professor of Theoretical Astrophysics**, Niels Bohr Institute, Blegdamsvej 17, 2100 Copenhagen, Denmark
- Jul. 2008 – Sep. 2009 **Sherman Fairchild Prize Fellow in Theoretical Astrophysics**, California Institute of Technology
- Aug. 2006 – Jul. 2008 **Postdoctoral fellow of the Joint Institute for Nuclear Astrophysics (JINA)**, University of Arizona. Advisor: A. Burrows

Professional Education

- Sep. 2003 – Mar. 2007 Graduate Student, AEI and Universität Potsdam. Supervisors: B. Schutz, E. Seidel.
- Aug. 2001 – May 2002 Graduate Exchange Student, Departments of Physics and Astronomy The University of Arizona.
- Oct. 1998 – Aug. 2003 Studies of Physics and Astronomy, Universität Heidelberg.

Scientific Interests and Expertise

- Core-collapse supernova theory, including neutrino radiation transport and interactions, equation of state (EOS) of nuclear matter, thermonuclear reactions / nucleosynthesis.
- Gravitational wave astronomy and data analysis; Bayesian model selection and parameter estimation for sources of gravitational waves.
- Theory of gamma-ray burst central engines, including coalescence and merger of compact binaries and black-hole formation in the context of the collapsar model for long gamma-ray bursts.
- Numerical general relativity in non-vacuum spacetimes with and without black holes. Full Cauchy curvature evolution and conformally-flat treatments.
- High-performance scientific computing. Application and scaling of simulation codes to massively-parallel supercomputers at petascale levels. Parallelization paradigms, code optimization, workflows, and data management.

Key Scientific Achievements

- Demonstrated that the magnetorotational instability (MRI) obtains in rapidly spinning magnetized protoneutron stars and showed that the resulting magnetoturbulence exhibits an inverse cascade (large-scale dynamo) that builds up globally ordered magnetic field. This creates the magnetic-field configuration necessary to drive bipolar outflows in the context of hypernovae (Mösta, Ott, *et al.* 2015, Nature).
- Identified the crucial role of turbulence in reviving the stalled core-collapse supernova shock (Couch & Ott 2015).
- Demonstrated that precollapse asphericities in silicon/oxygen layers of core-collapse supernova progenitors can influence the explosion mechanism (Couch & Ott 2013).
- First long-term full GR 3D simulations of core collapse and supernova evolution (Ott *et al.* 2013).
- Demonstrated that the neutrino signal from a galactic core collapse event can be used to constrain progenitor structure and nuclear EOS (O'Connor & Ott 2013).
- Identification of correlated gravitational wave and neutrino signals in rapidly rotating stellar collapse (Ott *et al.* 2012).

- First long-term 3D general-relativistic simulations of the formation of a stellar-mass black hole at the core of a collapsing massive star (Ott *et al.* 2011).
- Identification of the prominent gravitational wave emission mechanisms in core-collapse supernovae and their mapping to individual explosion scenarios. Demonstration of a robust method to determine the explosion mechanism based on gravitational wave observation (Ott 2009ab, Logue *et al.* 2012).
- First extensive parameter study in spherical symmetry (+ rotation) elucidating the systematics of stellar-mass black hole formation with progenitor structure, rotation, and nuclear equation of state (O'Connor & Ott 2011)
- First long-term multi-dimensional momentum-space angle-dependent multi-group neutrino radiation-hydrodynamic simulations of the postbounce phase of core-collapse supernovae (Ott *et al.* 2008).
- First multi-dimensional general-relativistic simulations of stellar collapse employing realistic microphysics (Ott *et al.* 2007).
- First self-consistent mapping between pre-core-collapse stellar rotational configuration and protoneutron star spin and angular momentum distribution (Ott *et al.* 2006).
- Proposition of a novel mechanism for core-collapse supernova explosions that is based on the excitation of protoneutron star pulsational modes and their damping via acoustic waves. This acoustic supernova mechanism bears a strong signature in gravitational waves. On the cover of PRL 96, 20, 2006 and discussed by T. Creighton in Nature Physics 2, 2006.
- Identification of a postbounce rotational nonaxisymmetric instability in protoneutron stars at ratios of rotational kinetic to gravitational potential energy much lower than previously believed possible (Ott *et al.* 2005).

Collaborations

- **Simulating eXtreme Spacetimes (SXS) Collaboration:** Numerical relativity, mergers of black hole and neutron star binaries, core-collapse supernova simulations. A collaboration of researchers led by Caltech and including Cornell, CITA (Canadian Institute for Theoretical Astrophysics), Washington State University, and California State University at Fullerton.
- **Einstein Toolkit** – a community toolkit for computational relativistic astrophysics. A NSF-funded collaborative project between Caltech, LSU, GATech, and RIT.
- **Michigan State University, S. Couch:** Core-collapse supernova theory and simulations.
- **Joint Institute for Nuclear Astrophysics:** Senior Investigator on the NSF Physics Frontier Center Joint Institute for Nuclear Astrophysics (PI: H. Schatz, MSU).
- **Princeton University, A. Burrows:** Core-collapse supernova theory and modeling, black hole formation in stellar collapse, neutrino radiation transport formalisms.
- **Max Planck Institute for Gravitational Physics, A. Buonanno and R. Haas:** Compact object mergers.
- **University of Arizona, W. D. Arnett and C. Meakin:** Massive star evolution.
- **University of Southampton, I. Hawke:** Numerical methods for GRMHD and black hole formation.
- **Perimeter Institute, E. Schnetter:** Numerical relativity and computational science.
- **Louisiana State University, Center for Computation and Technology, P. Diener, F. Löffler:** Petascale scientific computing, computational science, numerical relativity, nonaxisymmetric rotational dynamics of protoneutron stars.

Graduate Students

Students graduated:

- **Jeffrey Kaplan** (physics) 2010-2013, PhD thesis *Where Tori Fear to Tread: Hypermassive Neutron Star Remnants and Absolute Event Horizons or Topics in Computational General Relativity*, now in the private sector, working as a data scientist for a startup that mines and analyzes data on microlensing.
- **Evan O'Connor** (physics), 2008-2012, PhD thesis *Topics in Core-Collapse Supernova Theory: The Formation of Black Holes and the Transport of Neutrinos*. Now postdoc at CITA.

Current Graduate Students:

- **Kevin Barkett** (physics), 2012-, fourth year.
Binary black hole simulations and data analysis. Working with Mark Scheel.
- **Jonathan Blackman** (physics), 2012-, fourth year.
Binary black hole simulations and data analysis. Working with Mark Scheel and postdoc Chad Galley.
- **Matthew Giesler** (physics), 2013-, third year.
Binary black hole simulations and X-ray binaries.
Working with Mark Scheel, postdoc Drew Clausen, and me.
- **Sherwood Richers** (physics), 2012-, fourth year.
Magnetic fields and neutrino transport in core-collapse supernovae and neutron star mergers.
- **Jonas Lippuner** (physics), 2012-, fourth year.
Neutron star mergers and nucleosynthesis. Working with Einstein Fellow Luke Roberts.

Postdocs

Current Postdocs advised/mentored:

- **Drew Clausen**, 2013-, DuBridge Fellow, Theoretical Astrophysics.
- **Jim Fuller**, 2013-, DuBridge Fellow, Theoretical Astrophysics.
- **David Radice**, 2013-. Sherman Fairchild Postdoctoral Prize Fellow. Numerical relativity.
- **Daniel Hemberger**, 2013-. Numerical relativity.
- **Luke Roberts**, 2012-. Einstein Fellow since Fall 2013. Nuclear astrophysics and core-collapse supernova theory.
- **Viktoriya Morozova**, 2014-. Radiation-hydrodynamics of supernova explosions.
- **André da Silva Schneider**, 2014-. Nuclear physics and astrophysics.

Former Postdocs:

- **Christine Corbett Moran**, 2015. Supermassive star collapse. Now NSF Astronomy & Astrophysics Postdoctoral Fellow at Caltech.
- **Philipp Mösta**, 2011-2015. GRMHD and core-collapse supernova theory. Now Einstein Fellow at the University of California, Berkeley.
- **Sebastiano Bernuzzi**, 2014-2015. Numerical Relativity. Now Assistant Professor of Physics at the University of Parma, Italy.

- **Sean M. Couch**, 2014-2015. Supernova Theory and Simulation. Now Assistant Professor of Physics & Astronomy at Michigan State University.
- **Christian Reisswig**, 2010-2015. Einstein Fellow. Numerical relativity. Now postdoc at the Albert Einstein Institute, Potsdam, Germany.
- **Nick Taylor**, 2010-2014. Numerical relativity.
- **Roland Haas**, 2011-2014. Numerical relativity, Einstein Toolkit. Now a research programmer at the Albert Einstein Institute, Potsdam, Germany.
- **Anthony Piro**, 2010-2014. Theoretical astrophysics. Compact objects, supernovae, and other explosive phenomena. Now a postdoctoral associate at Carnegie Observatories.
- **Ernazar Abdikamalov**, 2011-2014. Core-collapse supernova theory. Now junior faculty at Nazarbayev University, Kasachstan.
- **Anil Zenginoglu**, 2010-2013. Numerical relativity. Now staff at the University of Maryland.
- **Fang Peng**, 2010-2011. Now works in the private sector.

Teaching Experience

Teaching of Courses at Caltech:

- Jan.-Mar. 2015 Caltech Physics course 136B: Applications of Classical Physics.
- Jan.-Mar. 2015 Caltech Astrophysics course 101: Physics of Stars.
- Apr.-Jun. 2014 Caltech Astrophysics course 102: Interstellar Medium.
- Jan.-Mar. 2014 Caltech Astrophysics course 190: Computational Astrophysics.
- Oct.-Dec. 2013 Caltech Astrophysics course 121: Radiative Processes (with Gregg Hallinan).
- Apr.-Jun. 2013 Caltech Astrophysics course 102: Interstellar Medium.
- Apr.-Jun. 2013 Caltech Astrophysics Independent Study: Computational Astrophysics. Mentored students Io Kleiser, Michael Eastwood, Antonija Oklopčic, and Sebastian Pineda.
- Jan.-Mar. 2013 Caltech Astrophysics Independent Study: Computational Astrophysics. Mentored senior undergrad Stacy Kim.
- Oct.-Dec. 2012 Caltech Astrophysics course 121: Radiative Processes (with Gregg Hallinan).
- Apr.-Jun. 2012 Caltech Astrophysics course 125: High-Energy Astrophysics (with Alan Weinstein).
- Jan.-Mar. 2012 Caltech Astrophysics course 190: Computational Astrophysics.
- Sep.-Dec. 2011 Caltech Freshman Seminar 001: Cosmic Explosions.
- Apr.-Jun. 2011 Caltech Astrophysics course 125: High-Energy Astrophysics (with Alan Weinstein).
- Jan.-Mar. 2011 Caltech Astrophysics course 190: Computational Astrophysics (with Andrew Benson).
- Apr.-Jun. 2010 Caltech Physics course Ph1c: Electromagnetism; Section 6 (recitation).
- Jan.-Mar. 2010 Caltech Astrophysics course 215: Seminar in Theoretical Astrophysics – Interacting Binaries.

Other Teaching:

- Mar. 2015 Three 1.5-hour lectures on Numerical Relativity and Computational Relativistic Astrophysics at the International School on Gravitational Wave Physics at the Yukawa Institute, Kyoto University, Japan.
- Jul. 2014 Two 1-hour lectures on Core Collapse and Neutron Star Mergers at the 2014 UC HIPACC Astrocomputing School at UCSD, University of California San Diego.
- Sep. 2013 Two 1.25-hour Lectures on Supernovae and Neutron Stars at the TAUP Summer School, Asilomar, CA.
- Jul. 2013 Lecture on Stellar Collapse and Core-Collapse Supernovae at CGWAS 2013, Caltech, Pasadena, CA.
- Jul. 2011 UC HIPACC Astrocomputing School at UC Berkeley / LBNL: Lectures on stellar collapse and general-relativistic hydrodynamics.
- Jun. 2011 Lectures on high-performance computing and thread-based parallelism at the Iowa High-Performance Computing School, Iowa City, IA.
- Sep. 2009 Lecture on the Physics of Stellar Collapse and Core-Collapse Supernovae in course on Explosive Stages in Stellar Evolution, Århus University, Denmark.
- Aug. 2009 Lecturer at CompSchool 2009, Niels Bohr International Academy, Copenhagen.
- Nov. 2008 Lecturer at a GR hydrodynamics school/workshop hosted by the Max-Planck-Institut für Astrophysik in Garching. Lecture on including microphysical EOSs and deleptonization in GR simulations of stellar collapse.

- Jan. 2008 Invited lecturer at Asia-Pacific Center for Theoretical Astrophysics Winter School on Black Hole Astrophysics, Daejeon and Pohang, Korea. Lectures on astrophysical aspects of black hole formation.
- Apr.-Jul. 2004 Teaching assistant graduate-level Quantum Mechanics, Universität Potsdam. Repetition and problem class taught. 20 entry-level graduate students.

Service and Synergistic Activities

Current:

- Initiator and lead organizer, Microphysics in Computational Relativistic Astrophysics (**MICRA**) Workshop 2015 (Nordita, Stockholm), 2013 (ECT*, Trento), 2011 (Perimeter Institute, Waterloo), 2009 (Niels Bohr Institute, Copenhagen).
- **Einstein Toolkit**. The Einstein Toolkit is an open-source collection of codes for numerical relativity and computation relativistic astrophysics. The Einstein Toolkit is based on and an offspring of the Cactus Computational Toolkit (<http://cactuscode.org>) that was originally initiated by Ed Seidel and Gabrielle Allen in the late 1990s. I am a member of the Einstein Toolkit maintainer group and a PI on the NSF Physics at the Information Frontier grant that supports work on the Einstein Toolkit at Caltech, Georgia Tech, LSU, and at the Rochester Institute of Technology. I have been involved in the Einstein Toolkit since 2008 and have overseen the writing of the most recent Einstein Toolkit paper, lead-authored by my postdoc Philipp Mösta (see publication list, Mösta et al. 2013). The Einstein Toolkit is used by ~50 different research groups worldwide, including the majority of the numerical relativity groups in the US. More information about the Einstein Toolkit can be found at <http://einsteintoolkit.org>.
- **stellarcollapse.org**. <http://stellarcollapse.org> is a portal for the stellar collapse and core-collapse supernova community that I have initiated and am maintaining. Jim Lattimer is using stellarcollapse.org to provide his neutron star mass table to the community. My group is providing simulation results, supplemental data to publications, and a variety of open-source codes and microphysics tables and routines for the community. These include our 1D GR stellar collapse code GR1D, the neutrino interaction routines NuLib (by my former student Evan O'Connor), and an assortment of nuclear equation of state tables and routines now used widely in the community.
- Organizer and principal of the **Caltech Gravitational-Wave Astrophysics School 2015 and 2013**. The goal of CGWAS is to train the first generation of gravitational-wave astrophysicists. CGWAS is part of the educational/outreach component of my NSF CAREER project and will be held in 2013, 2015, and 2017. CGWAS 2015 attracted a total of ~60 graduate students and senior undergraduates from 11 nations. The list of lecturers included Duncan Brown (Syracuse), Alessandra Corsi (Texas Tech), Jessica McIver (Caltech), Brian Metzger (Columbia), Chiara Mingarelli (Caltech), Samaya Nissanke (Radboud), Evan O'Connor (NC State), Erin O'Sullivan (Duke), Ben Owen (Texas Tech), Jocelyn Read (Fullerton), Patricia Schmidt (Caltech), Michele Vallisneri (JPL/Caltech), and Alan Weinstein (LIGO/Caltech). Details on the program are available at <http://www.cgwas.org>. CGWAS 2013 attracted a total of ~50 graduate students and senior undergraduates from 12 nations. The list of lecturers included Marjiam Modjaz (NYU), Dan Kasen (UCB/LBNL), Kate Scholberg (Duke), Alan Weinstein (LIGO/Caltech), Samaya Nissanke (Caltech), Eric Thrane (LIGO/Caltech), Erik Schnetter (Perimeter), Richard O'Shaughnessy (U Wisconsin Milwaukee), and myself.
- Associate Editor, **Computational Astrophysics and Cosmology (CompAC)**, Springer Verlag.
- Member, NSF Extreme Science and Engineering Discovery Environment (XSEDE) Computer Time Allocation Panel. This panel meets four times a year to decide about the allocation of national supercomputer resources.
- Referee: Nature Physics, The Astrophysical Journal Letters, The Astrophysical Journal, Living Reviews in Relativity, New Journal of Physics, Classical and Quantum Gravity, Monthly Notices of the Royal Astronomical Society, Physical Review Letters, Physical Review D, Astronomy & Astrophysics, General Relativity and Gravitation, Reviews in Modern Physics.

Past:

- Co-liason, LIGO Scientific Collaboration and Virgo Collaboration Supernova working group.
- Member-at-Large, executive committee American Physical Society Topical Group on Gravitation (GGR), 2012-2015.
- Chair, APS GGR committee for the organization of a Gravitational Physics Principle Investigator Day at NSF, 2014.
- Member, Local Organizing Committee, 13th International Conference on Topics in Astroparticle and Underground Physics (TAUP 2013), Asilomar, CA, USA, September 8-13, 2013.
- Member, Scientific Organizing Committee, 20th International Conference on General Relativity and Gravitation (GR20), July 7-13, 2013, Warsaw, Poland.
- Member, Hubble Fellowship Selection Committee 2013.
- Chair, APS GGR Early Career Lecturer Selection Committee, 2012-2013.
- Working group convener, Nuclear Astrophysics Town Meeting 2012, Detroit, October 9-10, 2012.
- Member, NSF Office of Cyberinfrastructure task force on grand challenges in computational science, 2009 - 2010.
- Member, Scientific Organizing Committee, Gravitational Wave Bursts Conference in Chichen Itza, Yucatán, Mexico, December 2009.
- Lead organizer, Microphysics in Computational Relativistic Astrophysics (MICRA) workshops 2011 (Perimeter Institute) and 2009 (Niels Bohr Institute).
- Lead organizer, Summer School on Stellar Collapse, Compact Objects, Supernovae, and Gamma-Ray Bursts at the Niels Bohr International Academy, August 18-21, 2009.
- Member, Scientific Organization Committee, Numerical Relativity and Data Analysis Workshop 2009, Albert Einstein Institute, Potsdam, Germany, July 6-9, 2009.

Short Author List Publications in refereed Journals

- [74] 2015 P. Mösta, **C. D. Ott**, D. Radice, L. F. Roberts, E. Schnetter, R. Haas, *A Large Scale Dynamo and Magnetoturbulence in Rapidly Rotating Core-Collapse Supernovae*, Nature Letter, <http://www.nature.com/nature/journal/vaop/ncurrent/abs/nature15755.html>. [ads](#).
- [73] 2015 S. E. Gossan, P. Sutton, A. Stuver, M. Zanolin, K. Gill, and **C. D. Ott**, *Observing Gravitational Waves from Core-Collapse Supernovae in the Advanced Detector Era*, submitted to Phys. Rev. D., arXiv:1511.02836. [ads](#).
- [72] 2015 F. Foucart, R. Haas, M. Duez, E. O'Connor, **C. D. Ott**, L. F. Roberts, L. Kidder, J. Lippuner, H. Pfeiffer, and M. Scheel, *Low Mass Binary Neutron Star Mergers: Gravitational Waves and Neutrino Emission*, submitted to Phys. Rev. D., arXiv:1510.06398. [ads](#).
- [71] 2015 D. Radice, **C. D. Ott**, E. Abdikamalov, S. M. Couch, R. Haas, and E. Schnetter, *Neutrino-Driven Convection in Core-Collapse Supernovae: High-Resolution Simulations*, submitted to the Astrophys. J., arXiv:1510.05022. [ads](#).
- [70] 2015 K. Barkett, M. Scheel, R. Haas, **C. D. Ott**, S. Bernuzzi, D. Brown, B. Szilagyi, J. D. Kaplan, J. Lippuner, C. D. Muhlberger, F. Foucart, and M. Duez, *Gravitational Waveforms for Neutron Star Binaries from Binary Black Hole Simulations*, submitted to Phys. Rev. Lett., arXiv:1509.05782. [ads](#).
- [69] 2015 S. Richers, D. Kasen, E. O'Connor, R. Fernandex, and **C. D. Ott**, *Monte Carlo Neutrino Transport Through Remnant Disks from Neutron Star Mergers*, Astrophys. J. 813, 38. [ads](#).
- [68] 2015 D. Radice, S. M. Couch, and **C. D. Ott**, *Implicit large eddy simulations of anisotropic weakly compressible turbulence with application to core-collapse supernovae*, Comp. Astrophys. Cosmol. 2, 7. [ads](#).
- [67] 2015 E. Abdikamalov, **C. D. Ott**, D. Radice, L. F. Roberts, R. Haas, C. Reisswig, P. Mösta, H. Klion, and E. Schnetter, *Neutrino-driven Turbulent Convection and Standing Accretion Shock Instability in Three-Dimensional Core-Collapse Supernovae*, Astrophys. J. 808, 70. [ads](#).
- [66] 2015 V. Morozova, A. L. Piro, M. Renzo, **C. D. Ott**, D. Clausen, S. M. Couch, J. Ellis, L. F. Roberts, *Light Curves of Core-Collapse Supernovae with Substantial Mass Loss using the New Open-Source SuperNova Explosion Code (SNEC)*, Astrophys. J. 814, 63. [ads](#).
- [65] 2015 J. Fuller and **C. D. Ott**, *Dark Matter-induced Collapse of Neutron Stars: A Possible Link Between Fast Radio Bursts and the Missing Pulsar Problem*, Mon. Not. R. Ast. Soc. 450, L71. [ads](#).
- [64] 2015 F. Foucart, E. O'Connor, L. F. Roberts, M. Duez, R. Haas, L. Kidder, **C. D. Ott**, H. Pfeiffer, M. Scheel, B. Szilagyi, *Post-merger evolution of a neutron star-black hole binary with neutrino transport*, Phys. Rev. D. 91, 124021. [ads](#).
- [63] 2015 J. Fuller, H. Klion, E. Abdikamalov, and **C. D. Ott**, *Supernova Seismology: Gravitational Wave Signatures of Rapidly Rotating Core Collapse*, Mon. Not. R. Ast. Soc. 450, 414. [ads](#).
- [62] 2015 D. Clausen, A. L. Piro, and **C. D. Ott**, *The Black Hole Formation Probability*, Astrophys. J. 799, 190. [ads](#).
- [61] 2015 S. M. Couch and **C. D. Ott**, *The Role of Turbulence in Neutrino-driven Core-collapse Supernova Explosions*, Astrophys. J. 799, 5. [ads](#).
- [60] 2014 W. Engels, R. Frey, and **C. D. Ott**, *Multivariate Regression Analysis of Gravitational Waves from Rotating Core Collapse*, Phys. Rev. D. 90, 124026. [ads](#).
- [59] 2014 C. Muhlberger, F. Hossein Nouri, M. Duez, F. Foucart, L. Kidder, **C. D. Ott**, M. A. Scheel, B. Szilagyi, and S. Teukolsky, *Magnetic effects on the low- $T/|W|$ instability in differentially rotating neutron stars*, Phys. Rev. D. 90, 104014. [ads](#).
- [58] 2014 F. Foucart, B. Deaton, M. Duez, E. O'Connor, **C. D. Ott**, R. Haas, L. Kidder, H. Pfeiffer, M. Scheel, and B. Szilagyi, *Neutron star-black hole mergers with a nuclear equation of state and neutrino cooling: Dependence in the binary parameters*, Phys. Rev. D. 90, 024026. [ads](#).

- [57] 2014 J. D. Kaplan, **C. D. Ott**, E. P. O'Connor, K. Kiuchi, L. Roberts, and M. Duez, *The Influence of Thermal Pressure on Equilibrium Models of Hypermassive Neutron Star Merger Remnants*, *Astrophys. J.* 790, 19. [ads](#).
- [56] 2014 P. Mösta, S. Richers, **C. D. Ott**, R. Haas, A. L. Piro, K. Boydstun, E. Abdikamalov, C. Reisswig, E. Schnetter, *Magnetorotational Core-collapse Supernovae in Three Dimensions*, *Astrophys. J. Lett.* 785, L29. [ads](#).
- [55] 2014 P. Mösta, B. Mundim, J. Faber, R. Haas, S. Noble, T. Bode, F. Löffler, **C. D. Ott**, C. Reisswig, E. Schnetter, *GRHydro: A new open source general-relativistic magnetohydrodynamics code for the Einstein Toolkit*, *Class. Quantum Grav.* 31, 015005. [ads](#).
- [54] 2014 E. Abdikamalov, S. Gossan, A. DeMaio, **C. D. Ott**, *Measuring the Angular Momentum Distribution in Core-Collapse Supernova Progenitors with Gravitational Waves*, *Phys. Rev. D.* 90, 044001. [ads](#).
- [53] 2013 S. M. Couch and **C. D. Ott**, *Revival of The Stalled Core-Collapse Supernova Shock Triggered by Precollapse Asphericity in the Progenitor Star*, *Astrophys. J. Lett.* 778, L7. [ads](#).
- [52] 2013 C. Reisswig, **C. D. Ott**, E. Abdikamalov, R. Haas, P. Mösta, and E. Schnetter, *Formation and Coalescence of Cosmological Supermassive Black Hole Binaries in Supermassive Star Collapse*, *Phys. Rev. Lett.* 111, 151101. [ads](#).
- [51] 2013 M. B. Deaton, M. Duez, F. Foucart, E. O'Connor, **C. D. Ott**, L. Kidder, C. Muhlberger, M. Scheel, B. Szilagyi, *Black Hole-Neutron Star Mergers with a Hot Nuclear Equation of State: Outflow and Neutrino-Cooled Disk for a Low-Mass, High-Spin Case*, *Astrophys. J.* 776, 47. [ads](#).
- [50] 2013 F. Foucart, M. B. Deaton, M. Duez, L. Kidder, I. MacDonald, **C. D. Ott**, H. Pfeiffer, M. Scheel, B. Szilagyi, S. Teukolsky, *Black Hole-Neutron Star Mergers at Realistic Mass Ratios: Equation of State and Spin Orientation Effects*, *Phys. Rev. D.* 87, 084006. [ads](#).
- [49] 2013 C. Reisswig, R. Haas, **C. D. Ott**, E. Abdikamalov, P. Mösta, D. Pollney, E. Schnetter, *Three-Dimensional General-Relativistic Hydrodynamic Simulations of Binary Neutron Star Coalescence and Stellar Collapse with Multipatch Grids*, *Phys. Rev. D.* 87, 064023. [ads](#).
- [48] 2013 D. Radice, E. Abdikamalov, L. Rezzolla, and **C. D. Ott**, *A New Spherical-Harmonics Scheme for Multi-Dimensional Radiation Transport I: Static Matter Configurations.*, *J. Comp. Phys.* 242, 648. [ads](#).
- [47] 2013 E. O'Connor and **C. D. Ott**, *The Progenitor Dependence of the Preexplosion Neutrino Emission in Core-Collapse Supernovae*, *Astrophys. J.*, 762, 126. [ads](#).
- [46] 2013 O. Korobkin, E. Abdikamalov, N. Stergioulas, E. Schnetter, B. Zink, S. Rosswog, and **C. D. Ott**, *The runaway instability in general-relativistic accretion disks*, *Mon. Not. R. Ast. Soc.* 431, 349. [ads](#).
- [45] 2013 **C. D. Ott**, E. Abdikamalov, P. Mösta, R. Haas, S. Drasco, E. O'Connor, C. Reisswig, C. Meakin, E. Schnetter, *General-Relativistic Simulations of Three-Dimensional Core-Collapse Supernovae*, *Astrophys. J.*, 768, 115. [ads](#).
- [44] 2012 C. J. Horowitz, G. Shen, E. O'Connor, **C. D. Ott**, *Charged-Current Neutrino Interactions in Core-Collapse Supernovae in a Virial Expansion*, *Phys. Rev. C.*, 86, 065806. [ads](#).
- [43] 2012 **C. D. Ott**, E. Abdikamalov, E. O'Connor, C. Reisswig, P. Kalmus, S. Drasco, A. Burrows, E. Schnetter, *Correlated Gravitational Wave and Neutrino Signals from General Relativistic Rapidly Rotating Iron Core Collapse*, *Phys. Rev. D.*, 86, 024026. [ads](#).
- [42] 2012 E. Abdikamalov, A. Burrows, **C. D. Ott**, F. Löffler, E. O'Connor, J. Dolence, and E. Schnetter, *A New Monte Carlo Method for Time-Dependent Neutrino Radiation Transport*, *Astrophys. J.*, 755, 111. [ads](#).
- [41] 2012 L. Dessart, E. O'Connor, **C. D. Ott**, *The Arduous Journey to Black-Hole Formation in Potential Gamma-Ray Burst Progenitors*, *Astrophys. J.*, 754, 76. [ads](#).
- [40] 2012 J. Logue, **C. D. Ott**, I.-S. Heng, P. Kalmus, J. Scargill, *Inferring Core-Collapse Supernova Physics with Gravitational Waves*, *Phys. Rev. D.*, 86, 044023. [ads](#).

- [39] 2012 B. Dasgupta, E. O'Connor, and **C. D. Ott**, *The Role of Collective Neutrino Oscillations in Core-Collapse Supernova Shock Revival*, Phys. Rev. D. 85, 065008. [ads](#).
- [38] 2012 F. Löffler, J. Faber, E. Bentivenga, T. Bode, P. Diener, R. Haas, I. Hinder, B. Mundim, **C. D. Ott**, E. Schnetter, G. Allen, M. Campanelli, P. Laguna, *The Einstein Toolkit: A Community Computational Infrastructure for Relativistic Astrophysics*, Class. Quantum Grav., 29, 115001. [ads](#).
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- [36] 2011 A. L. Piro and **C. D. Ott**, *Supernova fallback onto magnetars and propeller-powered supernovae*, Astrophys. J. 736, 108. [ads](#).
- [35] 2011 **C. D. Ott**, C. Reisswig, E. Schnetter, E. O'Connor, E. Abdikamalov, F. Löffler, P. Diener, I. Hawke, and A. Burrows. *Dynamics and Gravitational Wave Signature of Collapsar Formation*, Phys. Rev. Lett. 106, 161103. [ads](#).
- [34] 2011 E. Thrane, S. Kandhasamy, **C. D. Ott**, W. Anderson, N. Christensen, M. Coughlin, S. Dorsher, S. Giampanis, V. Mandic, A. Mytidis, T. Prestegard, P. Raffai, B. Whiting, *Long gravitational-wave transients and associated detection strategies for a network of terrestrial interferometers*. Phys. Rev. D. 83, 083004. [ads](#).
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- [32] 2011 E. O'Connor and **C. D. Ott**, *Black Hole Formation in Failing Core-Collapse Supernovae*, Astrophys. J. 730, 70. [ads](#).
- [31] 2011 T. Brandt, A. Burrows, E. Livne, and **C. D. Ott**, *Results From Core-Collapse Simulations with Multi-Dimensional, Multi-Angle Neutrino Transport*. Astrophys. J. 728, 8. [ads](#).
- [30] 2010 J. Nordhaus, T. Brandt, A. Burrows, E. Livne, and **C. D. Ott**, *Theoretical Support for the Hydrodynamic Mechanism of Pulsar Kicks*. Phys. Rev. D. 82, 103016. [ads](#).
- [29] 2010 F. Peng and **C. D. Ott**, *Helium Ignition on Accreting Neutron Stars with a New Triple-alpha Reaction Rate*, Astrophys. J. 725, 309. [ads](#).
- [28] 2010 E. O'Connor and **C. D. Ott**, *A New Open-Source Code for Spherically-Symmetric Stellar Collapse to Neutron Stars and Black Holes*, Class. Quantum Grav. 27, 114103. [ads](#).
- [27] 2010 M. Duez, F. Foucart, L. Kidder, **C. D. Ott**, and S. Teukolsky, *Equation of State Effects in Black Hole – Neutron Star Mergers*, Class. Quantum Grav. 27, 114106. [ads](#).
- [26] 2010 I. Leonor, L. Cadonati, E. Coccia, S. D'Antonio, A. Di. Credico, V. Fafone, R. Frey, W. Fulgione, E. Katsavounidis, **C. D. Ott**, G. Pagliaroli, K. Scholberg, E. Thrane, F. Vissani, *Searching for Prompt Signatures of Nearby Core-Collapse Supernovae by a Joint Analysis of Neutrino and Gravitational-Wave data*, Class. Quantum Grav. 27, 084019. [ads](#).
- [25] 2010 E. Abdikamalov, **C. D. Ott**, L. Rezzolla, H.-T. Janka and A. Marek, *Axisymmetric General Relativistic Simulations of the Accretion-Induced Collapse of White Dwarfs*, Phys. Rev. D. 81, 044012. [ads](#).
- [24] 2009 J. W. Murphy, **C. D. Ott**, and Adam Burrows, *A Model for Gravitational Wave Emission in Core-Collapse Supernovae*, Astrophys. J. 707, 1173. [ads](#).
- [23] 2009 **C. D. Ott**, *Probing the Core-Collapse Supernova Mechanism with Gravitational Waves*, Class. Quantum Grav. 26, 204015. [ads](#).
- [22] 2009 **C. D. Ott**, Topical Review: *The Gravitational Wave Signature of Core-Collapse Supernovae*, Class. Quantum Grav. 26, 063001. [ads](#).
- [21] 2009 L. Dessart, **C. D. Ott**, A. Burrows, and E. Livne, *Neutrino signatures and the neutrino-driven wind in Binary Neutron Star Mergers*, Astrophys. J. 690, 1681. [ads](#).
- [20] 2008 **C. D. Ott**, A. Burrows, L. Dessart, and E. Livne, *2D Multi-Angle, Multi-Group Neutrino Radiation-Hydrodynamic Simulations of Postbounce Supernova Cores*, Astrophys. J. 685, 1089. [ads](#).

- [19] 2008 H. Dimmelmeier, **C. D. Ott**, A. Marek, and H.-T. Janka, *The Gravitational Wave Burst Signal from Core Collapse of Rotating Stars*, Phys. Rev. D. 78, 064056. [ads](#).
- [18] 2008 T. Z. Summerscales, A. Burrows, **C. D. Ott** and L. S. Finn, *Maximum Entropy for Gravitational Wave Data Analysis: Inferring the Physical Parameters of Core-Collapse Supernovae*, Astrophys. J. 678, 1142. [ads](#).
- [17] 2008 L. Dessart, A. Burrows, **C. D. Ott**, and E. Livne, *The proto-neutron star phase of the collapsar model and the route to long-soft Gamma-ray bursts and Hypernovae*. Astrophys. J. 643, L43. [ads](#).
- [16] 2007 **C. D. Ott**, H. Dimmelmeier, A. Marek, H.-T. Janka, I. Hawke, and E. Schnetter, *3D Collapse of Rotating Stellar Iron Cores in General Relativity including Deleptonization and a Nuclear Equation of State*, Phys. Rev. Lett. 98, 261101. [ads](#).
- [15] 2007 **C. D. Ott**, H. Dimmelmeier, A. Marek, H.-T. Janka, I. Hawke, and E. Schnetter, *Rotating Collapse of Stellar Iron Cores in General Relativity*, Class. Quant. Grav. 24, S139, 2007. [ads](#).
- [14] 2007 H. Dimmelmeier, **C. D. Ott**, H.-T. Janka, A. Marek, and E. Müller, *Generic Gravitational Wave Signals from the Collapse of Rotating Stellar Cores*, Phys. Rev. Lett. 98, 251101. [ads](#).
- [13] 2007 L. Dessart, A. Burrows, E. Livne, and **C. D. Ott**, *Magnetically-driven explosions of rapidly-rotating white dwarfs following Accretion-Induced Collapse*, Astrophys. J. 669, 585. [ads](#).
- [12] 2007 A. Burrows, E. Livne, L. Dessart, **C. D. Ott**, and J. Murphy, *Simulations of Magnetically-Driven Supernova and Hypernova Explosions in the Context of Rapid Rotation*, Astrophys. J. 664, 416. [ads](#).
- [11] 2007 A. Burrows, E. Livne, L. Dessart, **C. D. Ott**, and J. Murphy, *Features of the Acoustic Mechanism of Core-Collapse Supernova Explosions*, Astrophys. J. 655, 416. [ads](#).
- [10] 2007 B. Zink, N. Stergioulas, I. Hawke, **C. D. Ott**, E. Schnetter, and E. Müller, *Non-Axisymmetric Instability and Fragmentation of General Relativistic Quasi-Toroidal Stars*, Phys. Rev. D. 76, 024019. [ads](#).
- [9] 2006 **C. D. Ott**, A. Burrows, L. Dessart, E. Livne, *A New Mechanism for Gravitational Wave Emission in Core-Collapse Supernovae*, Phys. Rev. Lett. 96, 201102. [ads](#).
- [8] 2006 L. Dessart, A. Burrows, E. Livne, and **C. D. Ott**, *Multi-Dimensional Radiation/Hydrodynamic Simulations of Protoneutron Star Convection*, Astrophys. J. 645, 534. [ads](#).
- [7] 2006 L. Dessart, A. Burrows, **C. D. Ott**, E. Livne, S.-C. Yoon, and N. Langer, *Multi-Dimensional Simulations of the Accretion Induced Collapse of White Dwarfs to Neutron Stars*, Astrophys. J. 644, 1063. [ads](#).
- [6] 2006 B. Zink, N. Stergioulas, I. Hawke, **C. D. Ott**, E. Schnetter, and E. Müller, *Black hole formation through fragmentation of toroidal polytropes*, Phys. Rev. Lett. 96, 161101. [ads](#).
- [5] 2006 **C. D. Ott**, A. Burrows, T. A. Thompson, E. Livne, *The Spin Periods and Rotational Profiles of Neutron Stars at Birth*, Astrophys. J. Suppl. Ser. 164, 130. [ads](#).
- [4] 2006 A. Burrows, E. Livne, L. Dessart, **C. D. Ott** and J. Murphy, *A New Mechanism for Core-Collapse Supernova Explosions*, Astrophys. J. 640, 878. [ads](#).
- [3] 2005 **C. D. Ott**, S. Ou, J. E. Tohline, and A. Burrows, *One-armed Spiral Instability in a Low- $T/|W|$ Post-bounce Supernova Core*, Astrophys. J. 625, L119. [ads](#).
- [2] 2005 R. Walder, A. Burrows, **C. D. Ott**, E. Livne, *Anisotropies in the Neutrino Fluxes and Heating Profiles in two-dimensional, time-dependent, multi-group Radiation Hydrodynamics Simulations of Rotating Core-Collapse Supernovae*, Astrophys. J. 626, 317. [ads](#).
- [1] 2004 **C. D. Ott**, A. Burrows, E. Livne, and R. Walder, *Gravitational Waves from Axisymmetric, Rotational Stellar Core Collapse*, Astrophys. J. 600, 834. [ads](#).

Long Author List Publications in refereed Journals

(only those are listed in which I have played a significant role)

- [la6] 2015 J. Aasi *et al.* (LIGO Scientific Collaboration and Virgo Collaboration), *An All-Sky Search for Long-Duration Gravitational Wave Transients with LIGO*, submitted to Phys. Rev. D., arXiv:1511.04398. [ads](#). CDO's contribution: co-wrote section on astrophysical sources of long GW transients.
- [la5] 2013 J. Aasi *et al.* (LIGO Scientific Collaboration and Virgo Collaboration), *A search for long-lived gravitational-wave transients coincident with long gamma-ray bursts*, accepted for publication in Phys. Rev. D., [ads](#). CDO's contribution: Developed the ad-hoc signal model that was used to generate upper limits (<https://dcc.ligo.org/LIGO-T1100093/public>). Provided extensive comments on the manuscript and participated in the review of the waveform model.
- [la4] 2013 S. Adriaán-Martínez *et al.* (Antares Collaboration, LIGO Scientific Collaboration, and Virgo Collaboration), *A First Search for coincident Gravitational Waves and High Energy Neutrinos using LIGO, Virgo and ANTARES data from 2007*, JCAP, JCAP06(2013)008. [ads](#). CDO's contribution: Authored introduction, section on source physics, and co-authored interpretation of results.
- [la3] 2012 J. Abadie *et al.* (LIGO Scientific Collaboration and Virgo Collaboration), *All-sky search for gravitational-wave bursts in the second joint LIGO-Virgo run*, Phys. Rev. D. 85, 122007. [ads](#). CDO's contribution: Stellar collapse / core-collapse supernova statements and interpretations.
- [la2] 2012 J. Abadie *et al.* (LIGO Scientific Collaboration), *Implications For The Origin Of GRB 051103 From LIGO Observations*, Astrophys. J. 755, 2. [ads](#). CDO's contribution: Participation in the LSC/LVC internal astrophysics and analysis review.
- [la1] 2011 J. Abadie *et al.* (LIGO Scientific Collaboration and Virgo Collaboration), *Search for Gravitational Wave Bursts from Six Magnetars*, Astrophys. J. Letters, 734, L35. [ads](#). CDO's contribution: Participation in the writing of the paper and in the LSC/LVC internal data analysis and astrophysics review.

Other Publications, Publications in Conference Proceedings and Books

- [nr25] 2013 C. D. Ott, E. O'Connor, S. Gossan, E. Abdikamalov, U. C. T. Gamma, S. Drasco, *Core-Collapse Supernovae, Neutrinos, and Gravitational Waves*, Proceedings of the Neutrino 2012 conference, Kyoto, Japan, Nuc. Phys. B Proc. Suppl. 235, 381. [ads](#).
- [nr24] 2012 E. O'Connor, L. Dessart, and C. D. Ott, *Black-Hole Formation in Potential Gamma-Ray Burst Progenitors*, Death of Massive Stars: Supernovae and Gamma-Ray Bursts, IAU Symposium 278, 373. [ads](#).
- [nr23] 2011 C. D. Ott, E. O'Connor, B. Dasgupta, *New Aspects and Boundary Conditions of Core-Collapse Supernova Theory*. Proceedings of the HAMBURG Neutrinos from Supernova Explosions (HANSE) 2011 conference, DESY Proc. Ser. 22. [ads](#).
- [nr22] 2011 P. Ajith, M. Boyle, D. A. Brown, S. Fairhurst, M. Hannam, I. Hinder, S. Husa, B. Krishnan, R. A. Mercer, F. Ohme, C. D. Ott, J. S. Read, L. Santamaria, J. T. Whelan, *Data formats for numerical relativity waves*, arXiv:0709.0093v3. Note: I contributed to the 2011 revision of this document. [ads](#).
- [nr21] 2011 E. O'Connor and C. D. Ott, *Thermal Effects on Black Hole Formation in Failed Core-Collapse Supernovae*, proceedings of the 2010 Nuclei in the Cosmos conference, Heidelberg, Germany. [ads](#).
- [nr20] 2011 C. D. Ott, E. O'Connor, F. Peng, C. Reisswig, U. Sperhake, E. Schnetter, E. Abdikamalov, P. Diener, F. Löffler, I. Hawke, C. A. Meakin, A. Burrows, *New Open-Source Approaches to the Modeling of Stellar Collapse and the Formation of Black Holes*, Proceedings of the HEDLA 2010 conference, Caltech, Pasadena, CA, USA, Astroph. Sp. Sc., 336, 151. [ads](#).

- [nr19] 2011 J. T. Oden, O. Ghattas, J. L. King, B. I. Schneider, K. Bartschat, F. Darema, J. Drake, T. Dunning, D. Estep, S. Glotzer, M. Gurnis, C. Johnson, D. S. Katz, D. Keyes, S. Kiesler, S. Kim, J. Kinter, G. Klimeck, C. W. McCurdy, R. Moser, **C. D. Ott**, A. Patra, L. Petzold, T. Schlick, K. Schulten, V. Stodden, J. Tromp, M. Wheeler, S. J. Winter, C. Wu, K. Yelick, J. Bass, *A Report of the National Science Foundation Advisory Committee on Cyberinfrastructure Task Force on Grand Challenges*. http://www.nsf.gov/cise/aci/taskforces/TaskForceReport_GrandChallenges.pdf.
- [nr18] 2010 **C. D. Ott** and E. O'Connor, *Studies of Stellar Collapse and Black Hole Formation with the Open-Source Code GR1D*, proceedings of the OMEG10 symposium, Osaka, Japan. .
- [nr17] 2009 **C. D. Ott**, E. Schnetter, A. Burrows, F. Löffler, and E. O'Connor, *Computational Models of Stellar Collapse and Core-Collapse Supernovae*, Proceedings of the DoE/SciDAC Conference 2009, June 14-18, San Diego, CA, J. Phys. Conf. Ser., 180, 012022. .
- [nr16] 2009 **C. D. Ott**, *Recent Progress in the Modeling of the Gravitational Wave Signature of Core-Collapse Supernovae*, Proc. of the Korean Winter School on Black Hole Astrophysics 2008, J. Korean Phys. Soc. 54, 2529, [ads](#).
- [nr15] 2008 B. Zink, N. Stergioulas, I. Hawke, **C. D. Ott**, E. Schnetter, E. Müller, *Fragmentation of General Relativistic Quasi-Toroidal Polytropes*, Proceedings of the 11th Marcel Grossman Meeting, Berlin, 2006, 1576, World Scientific, [ads](#).
- [nr14] 2008 E. Schnetter, **C. D. Ott**, P. Diener, and C. Reisswig, *Astrophysical Applications of Numerical Relativity — from Teragrid to Petascale*, Proceedings of the Teragrid 2008 Conference. [ads](#).
- [nr13] 2008 **C. D. Ott**, E. Schnetter, G. Allen, E. Seidel, J. Tao, and B. Zink, *A Case Study for Petascale Applications in Astrophysics: Simulating Gamma-Ray Bursts*, Proceedings of the 15th ACM Mardi Gras conference. <http://dl.acm.org/citation.cfm?doid=1341811.1341831>.
- [nr12] 2008 A. Burrows, L. Dessart, **C. D. Ott**, E. Livne, and J. Murphy, *Thoughts on Core-Collapse Supernova Theory*, Massive Stars as Cosmic Engines, IAU Symposium 250, 185. [ads](#).
- [nr11] 2007 B. Zink, N. Stergioulas, I. Hawke, **C. D. Ott**, E. Schnetter, and E. Müller, *Supermassive Black Hole Formation through Rotational Instabilities*, 12th Conference on Recent Developments in Gravity 2007, Nafplio, Greece, J. of Phys Conf. Ser. 68, 012050. [ads](#).
- [nr10] 2007 E. Schnetter, **C. D. Ott**, G. Allen, T. Goodale, T. Radke, E. Seidel, and J. Shalf, *Cactus Framework: Black Holes to Gamma Ray Bursts*, Petascale Computing: Algorithms and Applications, Ed. D. Bader, CRC Press, Boca Raton, Florida, USA. <http://www.crcpress.com/product/isbn/1584889101>.
- [nr9] 2007 A. Burrows, L. Dessart, E. Livne, and **C. D. Ott**, *Surprises in the Theory of Core-Collapse Supernova Explosions*, proceedings of “The Multicolored Landscape of Compact Objects and their Explosive Origin”, AIP Conf. Proc., Vol. 924, 243. .
- [nr8] 2007 L. Dessart, A. Burrows, **C. D. Ott**, and E. Livne, *Multi-Dimensional Simulations of the Accretion-Induced Collapse of White Dwarfs to Neutron Stars*, proceedings of “The Multicolored Landscape of Compact Objects and their Explosive Origin”, AIP Conf. Proc., Vol. 924, 126. [ads](#).
- [nr7] 2007 H. Dimmelmeier, **C. D. Ott**, H.-T. Janka, A. Marek, and E. Müller, *Generic Gravitational Wave Signals from the Collapse of Rotating Stellar Cores: A Detailed Analysis*, to appear in the Proceedings of the XLII Rencontres de Moriond, “Gravitational Waves and Experimental Gravity”. [ads](#).
- [nr6] 2007 A. Burrows, E. Livne, L. Dessart, **C. D. Ott**, *Multi-Dimensional Explorations in Supernova Theory*, Centennial Festschrift for Hans Bethe, Phys. Rep. 442, 23. [ads](#).
- [nr5] 2006 A. Burrows, E. Livne, L. Dessart, **C. D. Ott**, and J. Murphy, *An Acoustic Mechanism for Core-Collapse Supernova Explosions*, published in the proceedings of “Astronomy with Radioactivities V: From Gamma-Rays to Stardust”, N. Astro. Rev. 50, 487. [ads](#).
- [nr4] 2006 A. Burrows, L. Dessart, E. Livne, and **C. D. Ott**, *New ideas in the theory of core-collapse supernova explosions*, Proceedings of the International Symposium on Nuclear Astrophysics - Nuclei in the Cosmos - IX. 25-30 June 2006, CERN, 32.1. [ads](#).

- [nr3] 2005 A. Burrows, R. Walder, **C. D. Ott**, and E. Livne, *Supernovae, Rotation, and Bipolar Explosions*, *Nuc. Phys. A*, 752, 570. [ads](#).
- [nr2] 2004 A. Burrows, R. Walder, **C. D. Ott**, and E. Livne, *Rotating Core Collapse and Bipolar Supernova Explosions*, published in the proceedings of “The Fate of the Most Massive Stars,” ASP Conf. Ser. 322, 358. [ads](#).
- [nr1] 2004 A. Burrows, **C. D. Ott**, and C. Meakin, *Topics in Core-Collapse Supernova Theory*, published in the proceedings of “3-D Signatures in Stellar Explosions: A Workshop honoring J. Craig Wheeler’s 60th birthday”, eds. P. Höflich, P. Kumar, J. C. Wheeler, Cambridge Univ. Press, Cambridge, UK. [ads](#).

Invited Presentations

- [109] 2015, December 5 Instituto de Cosmologia y Fisica de las Americas (COFI) workshop on Gravitational Waves, San Juan, Puerto Rico. Title: *Simulation and Modeling of Gravitational Wave Sources*.
- [108] 2015, December 1 Embry-Riddle Aeronautical University (Prescott, AZ) Physics Science Speaker Series. Title: *New Insights into Massive Star Explosions*.
- [107] 2015, November 23 DUNE Supernova Workshop, SLAC. Title: *Core-Collapse Supernova Simulations: Overview & Status*.
- [106] 2015, November 19 Oak Ridge National Laboratory Physics Seminar. Title: *New Insights into Massive Star Explosions and an Update on Advanced LIGO*.
- [105] 2015, November 13 Physics and Astronomy Colloquium, Ohio University. Title: *New Insights into Massive Star Explosions*.
- [104] 2015, October 30 Astrophysics seminar, Stony Brook University. Title: *Core-Collapse Supernovae are Turbulent Beasts*.
- [103] 2015, October 29 International Workshop for the Next Generation Nucleon Decay and Neutrino Detector (NNN15) and Unification Day 2 (UD2), Stony Brook University. Title: *Supernova Neutrinos – A Review*.
- [102] 2015, July 15 International Supercomputing Conference, Frankfurt, Germany. Title: *Progress in Extreme Astrophysics via Large-Scale Computation*.
- [101] 2015, May 21 KIPAC Colloquium, Stanford University. Title: *New Aspects of Core-Collapse Supernova Theory*.
- [100] 2015, February 28 DOE Topical Collaboration on Neutrinos and Nucleosynthesis in Hot and Dense Matter Workshop, Lawrence Berkeley Laboratory, Berkeley, California. Title: *Core-Collapse Supernovae: Where we are and where we are going*.
- [99] 2014, December 15 National Academy of Sciences Committee Meeting on the Future of NSF Advanced Computing, Computer History Museum, Mountain View, California. Title: *Advanced Computing in Computational relativistic Astrophysics and Numerical Relativity*.
- [98] 2014, October 29 Astronomy Colloquium, University of California Santa Cruz. Title: *New Insights into Massive Star Explosions*.
- [97] 2014, October 9 Jet Propulsion Laboratory Astrophysics Colloquium. Title: *New Insights into Massive Star Explosions*.
- [96] 2014, October 8 Astronomy Colloquium, University of California Los Angeles. Title: *New Insights into Massive Star Explosions*.
- [95] 2014, August 14 XXVI IUPAP Conference on Computational Physics, CCP2014, Boston. Talk on: *Petascale Simulations of Core-Collapse Supernovae*.

- [94] 2014, July 14 Institute of Geophysics, Planetary Physics and Signatures (IGPPS) seminar, Los Alamos National Laboratory. Talk on: *The Death of Massive Stars in Core-Collapse Supernovae*.
- [93] 2014, June 12 FLASH Center Seminar, University of Chicago. Talk on: *New Aspects of Core-Collapse Supernova Theory*.
- [92] 2014, May 8 NSF SI2 Workshop on Challenges in Computational Astrophysics, Institute for High-Performance Computational Science with Structured Meshes and Particles, University of California Berkeley. Talk on: *Challenges for Numerical General Relativity and Computational Relativistic Astrophysics in the Petascale and Exascale Era*.
- [91] 2014, April 28 Joint Space Institute Colloquium, University of Maryland. Talk on: *New Aspects of Core-Collapse Supernova Theory*.
- [90] 2014, April 6 American Physical Society Meeting, Savannah, Florida. Talk on: *Petascale Simulations of Core-Collapse Supernovae*.
- [89] 2014, March 27 The Structure and Signals of Neutron Stars from Birth to Death Conference, Florence, Italy. Talk on: *Core-Collapse Supernovae: Recent Progress in Theory & Gravitational-Wave Emission*.
- [88] 2014, February 20 Nuclear Theory Seminar, Indiana University. Talk on: *Opportunities for Nuclear Astrophysics with Advanced LIGO*.
- [87] 2014, February 19 Physics Colloquium, Indiana University. Talk on: *New Aspects of Core-Collapse Supernova Theory*.
- [86] 2014, February 18 Astronomy Colloquium, University of Illinois. Talk on: *New Aspects of Core-Collapse Supernova Theory*.
- [85] 2013, December 13 Astrophysics Seminar, Center for Cosmology and Particle Physics, New York University. Talk on: *New Aspects of Core-Collapse Supernova Theory*.
- [84] 2013, November 19 Astrophysics Seminar, Institute for Advanced Study, Princeton. Talk on: *New Aspects of Core-Collapse Supernova Theory*.
- [83] 2013, November 5 2013 Squire Lecturer Colloquium, Department of Physics and Astronomy, Grinnell College. Talk on: *Supernova Physics and Gravitational Waves*.
- [82] 2013, October 28 Colloquium, Department of Physics and Astronomy, University of Kansas, Talk on: *Modeling the Death of Massive Stars*.
- [81] 2013, June 26 Colloquium, Indian Center for Theoretical Studies, Bangalore, India, Talk on: *Modeling the Death of Massive Stars*.
- [80] 2013, June 7 Yukawa Institute Workshop on Gravitational Waves and Numerical Relativity. Talk on *Advances in the Modeling of Stellar Collapse and Neutron Star Mergers: Where we are and where we need to go*.
- [79] 2013, May 14 51ergs Conference, North Carolina State University. Talk on *Probing Core-Collapse Supernovae with Gravitational Waves (and Neutrinos)*.
- [78] 2013, February 27 Astronomy Colloquium, University of Amsterdam. Talk on *The Death of Massive Stars*.
- [77] 2013, February 18 Invited Seminar, University of Heidelberg. Talk on *The Death of Massive Stars*.
- [76] 2013, February 14 Astronomy Colloquium, Ohio State University. Talk on *The Death of Massive Stars*.
- [75] 2013, February 7 Astronomy Colloquium, Steward Observatory, Univ. of Arizona. Talk on *Core-Collapse Supernovae and Neutron Star Mergers: Cosmic Laboratories of Extreme Physics*.
- [74] 2013, February 5 Astronomy Colloquium, UT Austin. Talk on *The Death of Massive Stars*.
- [73] 2013, February 1 CITA Seminar, CITA, University of Toronto. Talk on *The Death of Massive Stars*.

- [72] 2013, January 29 Astrophysics Seminar, McGill University. Talk on *Core-Collapse Supernovae and Other Outcomes of Stellar Collapse*.
- [71] 2012, October 9 Nuclear Astrophysics Town Meeting 2012, Joint Institute for Nuclear Astrophysics (JINA). Talk on *Prospects with LIGO: Nuclear Astrophysics enable by Gravitational Wave Astronomy*.
- [70] 2012, August 20 Physics Colloquium, Monash University, Melbourne, Australia. Talk on *Stellar Collapse, Core-Collapse Supernovae, and the Formation of Stellar-Mass Black Holes*.
- [69] 2012, August 8 International Symposium on Nuclei in the Cosmos XII, Cairns, Australia. Talk on *Outcomes of Stellar Collapse and Their Signatures in Gravitational Waves and Neutrinos*.
- [68] 2012, July 30 Rattle and Shine Conference, Kavli Institute for Theoretical Physics. Talk on *How to Rattle & Shine right: Microphysics – What, When, Why, How?*.
- [67] 2012, July 18 Institute for Nuclear Theory, University of Washington, Workshop on Core-Collapse Supernovae. Talk on *(1) Update on Gravitational-Wave Detectos, (2) The Gravitational Wave Signature of Core-Collapse Supernovae.*
- [66] 2012, June 12 Lunch Seminar, Kavli IPMU, Kashiwa, Japan, talk on *(1) Update on Gravitational-Wave Detectors, (2) New Insights into the Central Engine of Long Gamma-Ray Bursts*.
- [65] 2012, June 9 Neutrino 2012 Conference, Kyoto, Japan, plenary talk on *Core-Collapse Supernova Theory – Where we are and where we are heading*.
- [64] 2012, May 15 Sackler Conference on Astrophysics, Harvard University, talk on *Testing General Relativity with Core-Collapse Supernovae*.
- [63] 2012, May 1 Colloquium, MIT, Astrophysics Division, talk on *Core-Collapse Supernova Theory – Where we are and where we are heading*.
- [62] 2012, April 18 Colloquium, University of Rochester, Department of Physics and Astronomy, talk on *The Dawning of the Age of Gravitational Wave Astronomy*.
- [61] 2012, April 4 Colloquium, Caltech, Astronomy Department, talk on *Core-Collapse Supernova Theory 78 Years after Baade & Zwicky 1934 – Where we are and where we are heading*.
- [60] 2012, January 30 Colloquium, JILA, University of Colorado, talk on *Stellar Collapse, Core-Collapse Supernovae, and the Formation of Stellar-Mass Black Holes*.
- [59] 2011, November 23 Seminar, Institut für Theoretische Physik, Universität Frankfurt, talk on *New Aspects, Boundary Conditions and Horizons of Core-Collapse Supernova Theory*.
- [58] 2011, October 25 Physics Colloquium, Stony Brook University, talk on *Stellar Collapse, Core-Collapse Supernovae, and Black Hole Formation*.
- [57] 2011, October 17 Physics Colloquium, Cornell University, talk on *Stellar Collapse, Core-Collapse Supernovae, and Black Hole Formation*.
- [56] 2011, July 20 Hamburg Neutrinos from Supernova Explosions (HANSE) 2011 Conference, DESY Hamburg. Talk on *New Aspects and Boundary Conditions of Core-Collapse Supernova Theory*.
- [55] 2011, May 21 Advances in Computational General Relativity conference, Brown University. Talk on *Recent Advances in General Relativistic Stellar Collapse*.
- [54] 2011, May 1 American Physical Society April Meeting, Anaheim, CA. Invited session talk on *Modeling Core-Collapse Supernovae*.
- [53] 2011, April 20 Michigan State University, Nuclear Seminar. Presentation on *The Formation of Black Holes in Failing Core-Collapse supernovae*.

- [52] 2011, April 5/7 From Nuclei to White Dwarfs and Neutron Stars workshop, Les Houches, France. Lecture on *Stellar Collapse, Core-Collapse Supernovae and Stellar Mass Black Hole Formation* and lecture on *Gravitational-Wave Astronomy*.
- [51] 2011, March 21 The University of Arizona, Theoretical Astrophysics Colloquium: *Black Hole Formation in Failing Core-Collapse Supernovae*.
- [50] 2011, March 2 University of California, Santa Cruz, Astronomy Colloquium: *Black Hole Formation in Failing Core-Collapse Supernovae*.
- [49] 2011, February 11 Harvard CFA/ITC Lunch talk. 10-minute Presentation on *LIGO, Gravitational Waves, and Core-Collapse Supernova Physics*.
- [48] 2011, February 10 Harvard CFA/ITC Colloquium. Presentation on *Black Hole Formation in Failing Core-Collapse Supernovae*.
- [47] 2011, February 9 MIT LIGO GRAILS seminar. Presentation on *Black Hole Formation in Failing Core-Collapse Supernovae*.
- [46] 2010, December 1 Institute for the Physics and Mathematics of the Universe (IPMU), Tokyo, Japan. Presentation on *Black Hole Formation in Failing Core-Collapse Supernovae*.
- [45] 2010, November 30 Interdisciplinary Symposium “From Quarks to Supernovae”, Atakami, Japan. Presentation on *Recent Progress in the Modeling of Stellar Collapse and Core-Collapse Supernovae*.
- [44] 2010, November 2 Fall Meeting of the APS Division of Nuclear Physics, Santa Fe, NM. Presentation on *Formation of Black Holes in Failing Core-Collapse Supernovae*.
- [43] 2010, October 16 Gravitational Waves 2010 Conference, University of Minnesota. Presentation on *Gravitational Waves from Stellar Collapse*.
- [42] 2010, October 12 Physics Colloquium, University of Mississippi. Presentation on *Black Hole Formation in Failing Core-Collapse Supernovae*.
- [41] 2010, October 5 Physics Colloquium, Washington State University. Presentation on *Black Hole Formation in Failing Core-Collapse Supernovae*.
- [40] 2010, September 3 Astronomy Colloquium, University of California at Berkeley. Presentation on *Black Hole Formation in Failing Core-Collapse Supernovae*.
- [39] 2010, August 27 Seminar, Center for Computational Relativity and Gravitation, Rochester Institute of Technology. Presentation on *Stellar Collapse and Black Hole Formation*.
- [38] 2010, July 6 International conference on General Relativity and Gravitation 19 (GR19), Mexico City. Presentation on *Stellar Collapse and Black Hole Formation*.
- [37] 2010, May 1 Workshop in Honor of W. D. Arnett on the occasion of his 70th Birthday, The University of Arizona, Tucson, AZ. Presentation on *General-Relativistic Simulations of Stellar Collapse and the Formation of Stellar-Mass Black Holes*.
- [36] 2010, March 17 International conference on High Energy Density Laboratory Astrophysics (HEDLA), Caltech. Presentation on *General-Relativistic Simulations of Stellar Collapse and the Formation of Stellar-Mass Black Holes*.
- [35] 2010, March 9 omeg10 Symposium on the Origin of Matter and Evolution of the Galaxies, Osaka, Japan. Presentation on *Recent Progress in Theory of Core-Collapse Supernovae and Gamma-Ray Burst Central Engines*.
- [34] 2010, February 23 JIGSAW10 Workshop on Supernova Astroparticle Physics, TIFR, Mumbai, India. Presentation on *Stellar Collapse, Core-Collapse Supernovae, and the Formation of Stellar-Mass Black Holes*.
- [33] 2010, February 15 APS April 2010 Meeting, Washington, DC. Presentation on *Simulations of Stellar Collapse, Core-Collapse Supernovae, and Stellar-Mass Black Hole Formation*.

- [32] 2009, November 18 Astrophysics Seminar, CASS, UCSD. Presentation on *Probing the Mechanism of Core-Collapse Supernovae with Gravitational Waves*.
- [31] 2009, October 24 Conference on Computational Relativistic Astrophysics, Princeton Center for Theoretical Science. Presentation on *Probing the Mechanism of Core-Collapse Supernovae with Gravitational Waves*.
- [30] 2009, September 15 Astrophysics Seminar, SISSA, Trieste, Italy. Presentation on *Probing the Mechanism of Core-Collapse Supernovae with Gravitational Waves*.
- [29] 2009, July 16 12th Marcel Grossmann Conference on General Relativity, Paris, France. Presentation on *Probing the Mechanism of Core-Collapse Supernovae with Gravitational Waves*.
- [28] 2009, June 19 Workshop on Gravitational Waves from Neutron Star, Center for Gravitational Wave Physics, Penn State. Presentation on *Core-Collapse Supernova Mechanisms and Their Signatures in Gravitational Waves*.
- [27] 2009, June 17 Featured Talk, Scientific Innovation through Advanced Computing (SciDAC) conference, San Diego, CA. Presentation on *Core-Collapse Supernova Mechanisms and Constraints from Gravitational Wave Astronomy*.
- [26] 2009, May 28 57th Fujihara Seminar, “International Network of Gravitational Wave Observatories,” Shonan, Japan. Presentation on *The Death of Massive Stars: Science Opportunities with Gravitational Wave Observatories*.
- [25] 2009, May 25 Theory Seminar, National Observatory of Japan (NAOJ), Mitaka, Tokyo, Japan. Presentation on *Core-Collapse Supernova Mechanisms and their Signatures in Gravitational Waves*.
- [24] 2009, May 15 Physics Colloquium, University of Wisconsin-Milwaukee. Presentation on *Core-Collapse Supernova Mechanisms and their Signatures in Gravitational Waves*.
- [23] 2009, May 12 Gravitational-Wave Advanced Detector Workshop, Ft. Lauderdale, Florida. Presentation on *The high-frequency window: Nuclear Physics and Astrophysics with Gravitational Waves emitted by the Dynamics of Matter at High Densities and Energies*.
- [22] 2009, Mar. 10 Special Theoretical Astrophysics Seminar, TAPIR, California Institute of Technology. Presentation on *The Death of Massive Stars*.
- [21] 2009, Feb. 6 Special Theoretical Astrophysics Seminar, Institute for Theoretical Physics, University of Frankfurt. Presentation on *Core-Collapse Supernova Mechanisms and Their Signatures in Gravitational Waves*.
- [20] 2009, Feb. 4 Astrophysics Seminar, UC Irvine. Presentation on *Core-Collapse Supernova Mechanisms and Their Signatures in Gravitational Waves*.
- [19] 2009, Jan. 27 Cornell Theoretical Astrophysics Lunch Seminar, Cornell University, Ithaca, NY. Presentation on *Nonaxisymmetric Rotational Instabilities in the Core-Collapse Context*.
- [18] 2009, Jan. 22 Gravitational Wave Data Analysis Workshop 13, San Juan, Puerto, Review talk on core-collapse supernova modeling and the gravitational wave signature of core collapse supernovae.
- [17] 2009, Jan. 13 Center for Gravitational Wave Physics Seminar Series, Penn State. Presentation on *Understanding the Explosion Mechanism of Core-Collapse Supernovae with the Help of Gravitational Waves*.
- [16] 2008, Nov. 25 Caltech/JPL Association for Gravitational-Wave Research Seminar Series. Presentation on *Understanding the Explosion Mechanism of Core-Collapse Supernovae with the Help of Gravitational Waves*.
- [15] 2008, Jun. 30 - Jul. 11 Workshop: Asymmetric Instabilities in Stellar Core Collapse. Two presentations: (a) *Comparison of radiation-transport schemes for core-collapse supernova simulations* and (b) *GW emission in core-collapse supernovae*.

- [14] 2008, May 29 Aspen Center for Physics. Colloquium, *Core-Collapse Supernova Mechanism and Their Signatures in Gravitational Waves*.
- [13] 2008, Apr. 12 - 15 APS April Meeting. Invited talk on *Core-Collapse Supernova Theory and Gravitational Wave Emission*.
- [12] 2008, Mar. 6 Niels Bohr Institute. Seminar on *General Relativistic Simulations of Core-Collapse Supernovae and Gamma-Ray Bursts*.
- [11] 2008, Jan. 24 - 29 APCTP Winter School on Black Hole Astrophysics 2008, Daejeon & Pohang, S. Korea. Lectures on *Core-Collapse Supernova Theory and Black Hole Formation*.
- [10] 2007, Dec. 20 University of Basel, Department of Physics. Seminar on *Aspects of Core-Collapse Supernova Theory*.
- [9] 2007, Dec. 17 Max Planck Institute for Chemistry, Department of Cosmochemistry. Seminar on *Core-Collapse Supernova Mechanisms and Their Observables*.
- [8] 2007, Nov. 14 SUNY Stony Brook, Department of Physics and Astronomy. Seminar on *Aspects of Core-Collapse Supernova Theory*.
- [7] 2007, Sep. 20 University of Southampton, Applied Mathematics Department. Seminar on *The Core-Collapse Supernova Explosion Mechanism and the Gravitational Wave Signature of Core-Collapse Supernovae*, Southampton, UK.
- [6] 2007, Sep. 10 – 15 Trento ECT Meeting *Matter at Extreme Densities and Gravitational Waves from Compact Objects*. Presentation on *Gravitational Wave Emission Processes in the Postbounce Phase of Core-Collapse Supernovae: Indicators of the Explosion Mechanism?*, Trento, Italy.
- [5] 2007, Jan. 16 German Science Foundation research collaboration SFB/Transregio 7 *Gravitational Wave Astronomy* video talk series. Presentation on *3D Collapse of Rotating Stellar Iron Cores in General Relativity including Deleptonization and a Nuclear Equation of State*.
- [4] 2006, Jan. 23 – 24 Institut d’Astrophysique, Paris, France. ILIAS meeting on gravitational wave sources and detection. Talk on *Core-Collapse Supernova Rates and Detectability in Gravitational Waves*.
- [3] 2005, Sept. 12 Max-Planck-Institut für Gravitationsphysik, Potsdam, Germany. Meeting of the external Advisory Committee. Presentation on *3D GR Stellar Core Collapse*.
- [2] 2005, May 23 German Science Foundation research collaboration SFB/Transregio 7 *Gravitational Wave Astronomy* video talk series. Presentation on *One-armed Spiral Instability in a Low- $T/|W|$ Postbounce Supernova Core*.
- [1] 2002, Sep. 26 3rd Meeting of the European Union Research Training Network *Sources of Gravitational Waves*, Palma, Spain. Presentation on *Ingredients for a New Generation of Supernova Gravitational Radiation Calculations*.

Contributed Presentations

- [35] 2015, May 12 Blue Waters Symposium 2015. Talk on *(MHD) Turbulence in Core-Collapse Supernovae*.
- [34] 2015, April 15 Los Alamos National Laboratory, IGPPS Days. Talk on *Core-Collapse Supernovae, Gamma-Ray Bursts, and Neutrino Transport*.
- [33] 2014, April 8 American Physical Society April Meeting, Savannah, GA. Talk on *Models of Core-Collapse Supernova Explosions: Uncertainties in Presupernova Stellar Structure*.

- [32] 2013, April 15 American Physical Society April Meeting, Denver, CO. Talk on *The Gravitational-Wave Signature of Core-Collapse Supernovae*.
- [31] 2012, July 26 Institute of Nuclear Theory, University of Washington, Workshop on Core-Collapse Supernovae. Talk on *Inferring Core-Collapse Supernova Physics from Gravitational Waves*.
- [30] 2011, May 1 American Physical Society April meeting, Anaheim, CA. Presentation on *Dynamics and Gravitational Wave Signature of Collapsar Formation*.
- [29] 2011, Feb. 23 Fireworks workshop on cosmic explosions, Caltech. Review Presentation on *Recent Progress in the Modeling of Stellar Collapse and Core-Collapse Supernovae*.
- [28] 2010, Jun. 26 Numerical Relativity meets Data Analysis 2010 conference, Perimeter Institute, Waterloo, CA. Presentation on *Gravitational Waves from Core-Collapse Supernovae and Black Hole Formation*.
- [27] 2010, December 7 LIGO and VIRGO Scientific Collaboration externally triggered search telephone conference. 15-minute presentation on *Dynamics and Gravitational Wave Signature of Collapsar Formation*.
- [26] 2010, Feb. 15 APS April Meeting, Washington, DC. Presentation on *Gravitational-Wave Emission from Soft-Gamma Repeaters*.
- [25] 2009, Oct. 14 2nd Einstein Telescope workshop, Erice, Italy. Presentation on *Core-Collapse Supernova and Long-Soft GRB Science Goals for ET*.
- [24] 2009, July 16 12th Marcel Grossmann Conference on General Relativity, Paris, France. Presentation on *Gravitational Waves from Convection, SASI and the Onset of Explosion in Core-Collapse Supernovae*.
- [23] 2009, July 8 Numerical Relativity Data Analysis Conference, Albert Einstein Institute, Potsdam, Germany. Presentation on *Probing the Mechanism of Core-Collapse Supernovae with Gravitational Waves*.
- [22] 2009, July 2 Topics in Astroparticle and Underground Physics TAUP 2009, Rome, Italy. Presentation on *Probing the Mechanism of Core-Collapse Supernovae with Gravitational Waves*.
- [21] 2009, Jun. 24 8th Amaldi Conference on Gravitational Waves, Columbia University, NY, NY. Presentation on *Gravitational Waves from Convection, SASI and the Onset of Explosion in Core-Collapse Supernovae*.
- [20] 2009, May 4 APS April Meeting 2009, Denver, CO, presentation on *Gravitational Waves from Convection, SASI and the Onset of Explosion in Core-Collapse Supernovae*.
- [19] 2008, Oct. 24 Theoretical Astrophysics in Southern California Meeting 2008, UC Irvine. Presentation on *Constraining the Mechanism of Core-Collapse Supernova Explosions with Gravitational Waves*.
- [18] 2008, Sept 8 – 12 Conference on the Modeling of Gravitational Wave Sources, Valencia, Spain. Presentation on *Core-Collapse Supernova Mechanisms and their Signatures in Gravitational Waves*.
- [17] 2008, Apr. 7 – 9 US DoE/SciDAC Astrophysics Simulation Consortium Meeting, KIPAC Stanford. Presentation on *2D Multi-Angle, Multi-Group Radiation-Hydrodynamic Simulations of Postbounce Supernova Cores*.
- [16] 2008, Feb. 10 – 14 Workshop on GR Core-Collapse Simulations, MPA Garching. Presentation on *New Results on the GW Signature of Rotating Iron Core Collapse*.
- [15] 2007, Aug. 19 – 21 Notre Dame University, South Bend, Joint Institute for Nuclear Astrophysics Frontiers Meeting. Presentation on *Core-Collapse Supernova Theory, Gravitational Waves and Nuclear Astrophysics*.

- [14] 2007, May 31 – Jun. 2 Cornell University, 10. East Coast Gravity Meeting. Presentation on *Recent Progress in Modeling the Gravitational Wave Signature of Core-Collapse Supernovae*.
- [13] 2007, May 14 Theoretical Astrophysics Program, The University of Arizona, Internal Symposium. Presentation on *3D Stellar Iron Core Collapse in General Relativity*.
- [12] 2007, Feb. 27 – 28 Steward Observatory, The University of Arizona, Internal Symposium. Presentation on *The Gravitational Wave Signature of Core-Collapse Supernovae*.
- [11] 2006, Jul. 17 – 21 Albert-Einstein-Institut, New Frontiers in Numerical Relativity (NFNR). Presentation on *Rotating Collapse of Realistic Stellar Iron Cores in General Relativity – II. 3D Full GR Results*.
- [10] 2006, Jun. 15 Center for Computation and Technology (CCT), Louisiana State University. Presentation on *The Gravitational Wave Signature of Core-Collapse Supernovae. New Results from Simulations in 3 + 1 General Relativity*.
- [9] 2005, Dec. 1 Center for Computation and Technology (CCT), Louisiana State University. Presentation on *A new Mechanism for Core-Collapse Supernova Explosions - Implications for Gravitational-Wave Astronomy*.
- [8] 2005, Nov. 14 Albert-Einstein-Institut, Institute Seminar. Presentation on *A new Mechanism for Core-Collapse Supernova Explosions - Implications for Gravitational-Wave Astronomy*.
- [7] 2004, Dec. 9 – 11 SciDAC Supernova Science Center collaboration meeting, Lawrence Livermore National Laboratory, California. Presentation on *General Relativity and Stellar Core Collapse*.
- [6] 2004, Nov. 26 Uppsala Astronomical Observatory. Institute Seminar. Presentation on *Gravitational Waves from Core-Collapse Supernovae*.
- [5] 2004, Jul. 18 – 23 GR17, the 17th International Conference on General Relativity and Gravitation, Dublin. Presentation on *Recent Progress in General-Relativistic Simulations of Rotating Stellar Core Collapse*.
- [4] 2003, Dec. 8 Universität Potsdam, Astrophysics Seminar. Presentation on *Gamma-Ray Bursts and Rotating Massive Stars - The Collapsar Scenario*.
- [3] 2002, Jan. 15 SciDAC Supernova Science Center collaboration meeting, Tucson, Arizona. Presentation on *General Relativistic 3D Core-Collapse Studies with Cactus/GR3D*.
- [2] 2002, Jul. 1 Institute for Theoretical Astrophysics, Universität Heidelberg. Institute Seminar. Presentation on *Overview on Gravitational Waves from Core-Collapse Supernovae*.
- [1] 2001, Jan. 18 Astrophysics Seminar, Universität Heidelberg. Presentation on *Millisecond Pulsars*

Public Talks and Media Contributions

- [14] 2015, Mar. 22 “Things That Explode,” podcast on The Star Spot. <http://starspotpodcast.com/2015/03/22/episode-73-things-that-explode-with-christian-ott/>.
- [13] 2015, Mar. 4 “Supernova Neutrinos,” podcast on the Physics Central Physics Buzz Blog. <http://physicsbuzz.physicscentral.com/2015/03/podcast-supernova-neutrinos.html>.
- [12] 2015, Jan. 23 “Stellar Graveyard,” 12th Annual Symposium of the Astronomy & Space Exploration Society, University of Toronto. Title: *The Theory of Stellar Death and Explosion*.
- [11] 2013, Nov. 6 2013 Squire Lecture (for a general audience), Grinnell College. Title: *The explosive Death of Stars and the Birth of a New Astronomy*.
- [10] 2012, Jan. 26 Popular-level talk at the California Polytechnic State University, San Luis Obispo. Title: *Listening to the Sound of Cosmic Explosions*.
- [9] 2012, Jan. 13 Popular-level talk at the Orange County Amateur Astronomers Association Meeting. Title: *Stellar Collapse, Core Collapse Supernovae, and the Formation of Stellar-Mass Black Holes*.
- [8] 2011, Nov. 17 Popular-level talk at the W. M. Keck Science Center, Claremont McKenna, Pitzer, and Scripps Colleges. Title: *Listening to the Sound of Cosmic Explosions*.
- [7] 2011, Oct. 13 Interview with the National Public Radio show “StarDate” on Gravitational Waves and LIGO (executive producer: Damond Benningfield).
- [6] 2011, Oct. 4 Interview with German Public TV station Norddeutscher Rundfunk (NRD) show “Tagesschau” on supernovae and the Nobel Prize in Physics 2011.
- [5] 2010, May 15 Public lectures to Caltech Alumni on stellar collapse, core-collapse supernovae, and gravitational waves.
- [4] 2010, Feb. Filming and 1-hour interview for the documentary “Through the Wormhole” of the Discovery Science Channel hosted by Morgan Freeman.
- [3] 2009, Oct. 11 Altes Rathaus Potsdam, Germany. Public talk in German on *Ende mit Knall – Supernovae: Das explosive Sterben der Sterne*.
- [2] 2008/2009 Interview/Feature on core-collapse supernovae and black hole formation as part of the project *Science Face* (<http://www.scienceface.org>) run by the Max Planck Society (lead: Bernard Schutz).
- [1] 2007, Jun. 26 Ricarda-Huch-Schule, Dreieich, Germany. Public talk in German on *Supernovae, Neutronensterne, und Schwarze Löcher*.