

WILLIAM RILEY CASPER

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Department of Mathematics, Louisiana State University ◊ Baton Rouge, LA 70803

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EDUCATION

University of Washington, Seattle

June 2017

Ph.D in Mathematics

North Dakota State University

December 2010

M.S. in Mathematics and B.S. in Physics and Mathematics

EXPERIENCE

Louisiana State University, Baton Rouge

August 2017 - Present

Postdoc

Baton Rouge, LA

- Researched connections between algebraic geometry and integrable systems
- Taught undergraduate and graduate-level math courses

University of Washington

December 2011 - June 2017

Graduate TA/RA

Seattle, WA

- Worked as instructor for undergraduate courses in linear algebra, differential equations, advanced calculus, and abstract mathematics.

Los Alamos National Lab

June 2009 - Present

Various research roles

Los Alamos, NM

- Developed high-performance massively parallel codes for fluid dynamics simulations.
- Mentored graduate students participating in the 2016 Computational Physics Summer School.
- Performed data assimilation in high performance global ocean models on supercomputers.

SELECTED PUBLICATIONS

Casper, W. Riley, F. Alberto Grünbaum, Milen Yakimov, and Ignacio Zurrián *Reflective prolate-spheroidal operators and the KP/KdV equations*. Proc. Natl. Acad. of Sci. USA 2019.

Casper, W. Riley and Milen Yakimov *Integral operators, bispectrality and growth of Fourier algebras*. J. Reine Angew. Math (Crelle's Journal) 2019.

Casper, W. Riley and Milen Yakimov *The matrix Bochner problem*. 2018 (submitted) arXiv preprint 1803.04405.

Casper, W. Riley and Balu Nadiga *A new spectral clustering algorithm*. 2017 ArXiv preprint 1710.02756.

Casper, W. Riley *Elementary examples of solutions to Bochner's problem for matrix differential operators*. 2017. Journal of Approximation Theory

Nadiga, Balau, W. Riley Casper, and Philip W. Jones *Ensemble-based global ocean data assimilation*. 2013. Journal of Ocean Modelling

TECHNICAL STRENGTHS

Computer Languages

C, C++, Fortran, Python, Ruby

Tools

Git, Vim