Brief CV

William Riley Casper

1 Professional Preparation

University of Washington	Seattle, WA	Mathematics	Ph.D 2017
North Dakota State Unversity	Fargo, ND	Mathematics	M.S. 2010[1]
North Dakota State Unversity	Fargo, ND	Mathematics	B.S. 2010
North Dakota State Unversity	Fargo, ND	Physics	B.S. 2010

[1] all three degrees were completed simultaneously

2 Appointments

2020-Present	Assistant Professor of Mathematics, California State University, Fullerton, CA
2017-2020	Postdoctoral Researcher, Louisiana State University, Baton Rouge, LA
2011-2017	Graduate Student Instructor, UW Seattle (fall, winter, and spring)
2011-2017	Graduate Research Assistant, Los Alamos National Lab (summer)
2010-2011	Post-Bac Research Assistant, Los Alamos National Lab (year-long)
2007-2010	Teaching Assistant, North Dakota State University (year-long)

3 Publications

Publications Related to the Proposed Project

1. Casper, W. Riley and Milen Yakimov "The Matrix Bochner Problem," American Journal of Mathematics 2020 (to appear). arXiv:1803.04405

2. Casper, W. Riley, Stefan Kolb and Milen Yakimov "Bivariate Continuous q-Hermite Polynomials and Deformed Quantum Serre Relations," Journal of Algebra and Its Applications 2021, Vol. 20, No. 01, 2140016. arXiv:2002.07895

3. 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, 116(37) 18310-18315. arXiv:1909.01448

4. Casper, W. Riley and Milen Yakimov, "Integral operators, bispectrality and growth of Fourier algebras," J. Reine Angew. Math (Crelle's Journal) 2019 doi:10.1515/crelle-2019-0031.
arxiv:1807.09314

5. Casper, W. Riley "Elementary Examples of Solutions to Bochner's Problem for Matrix Differential Operators." Journal of Approximation Theory, 2018, 229:36-71. arxiv:1509.03674

6. Casper, W. Riley "The symmetric 2×2 hypergeometric matrix differential operators." preprint, 2019, submitted for publication. arXiv:1907.12703

Other Publications

7. Casper, W. Riley "A Connection Between Orthogonal Polynomials and Shear Instabilities in the QG Shallow Water Equations." arXiv preprint 1710.02756, 2017.

8. Casper, W. Riley and Balasubramanya Nadiga "A new spectral clustering algorithm." (submitted) arXiv preprint 1710.02756, 2017.

9. Coles, Patrick J. et al "Quantum Algorithm Implementation for Beginners." arXiv preprint 1804.03719, 2018.

10. Nadiga, Balasubramanya T., W. Riley Casper, and Philip W. Jones. "Ensemble-based global ocean data assimilation." Ocean Modelling 72 (2013): 210-230.

4 Synergistic Activities

Referee/Review Work

Ongoing	Reviewer for Zentralblatt MATH
Ongoing	Referee for Communications in Mathematical Physics, Journal of Approximation Theory, SIAM Journal on Mathematical Analysis, Studies in Applied Mathematics, and the International Electronic Journal of Geometry

Mentoring/Training

2016	Graduate student mentor for the Washington Experimental Mathematics Laboratory
2016	Graduate student mentor for the Los Alamos Summer School in Computational Physics
2015-16	Volunteer college math instructor at the Washington Corrections Center for Women (WCCW) as part of the Freedom Education Project of Puget Sound (FEPPS)
2015	Organizer for a weekly algebraic geometry seminar for students at Los Alamos National Lab, a student-run seminar discussing algebraic geometry and its scientific applications
2007-19	Tutor, teacher, grader, and mentor for diverse mathematics classes
Ongoing	Speaker multiple times for Problem Solving Seminar at CSUF
Ongoing	Research mentor for multiple undergraduate research teams at CSUF

Invited Conference Talks:

2018	ICM Satellite Conference in Cusco, Peru
2018	AMS-CMS Joint Math Conference in Shanghai, China
2018	Geometry and Physics XVI in Timisoara, Romania
2019	Orthogonal Polynomials, Special Functions and Appications (OPSFA) in Hagenberg, Austria
2019	Matrix-valued Special Functions and Integrability in Nijmegen, Netherlands
2020	13th AIMS Conference on Dynamical Systems, Differential Equations and Applications: *Algebraic and Geometric Methods in Nonlinear Differential Equations* in Atlanta, GA
2020	AMS Sectional Meeting at Tufts University, Medford, MA
2020	Orthogonal Polynomials, Special Functions, Operator Theory and Applications in Kent, UK