Adith Ramamurti

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Contact Information

Acoustics Division, Code 7161
U.S. Naval Research Laboratory
Washington, D.C. 20375

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Professional Experience

Research Physicist — Jun. 2024 - Present
Acoustics Division, U.S. Naval Research Laboratory,
Washington, DC 20375

R&D Scientist — May 2021 - May 2024
Applied Research in Acoustics,
Alexandria, VA 22314

Research Physicist — Nov. 2018 - May 2021
Acoustics Division, U.S. Naval Research Laboratory,
Washington, DC 20375

Education

Ph.D., Physics (Nuclear Theory) — Aug. 2013 - Nov. 2018
Stony Brook University, Stony Brook, NY
Advisor: Dr. Edward V. Shuryak
Dissertation title: Recent progress in understanding the role of monopoles in QCD

A.B., Physics (Mathematical); A.B., Music — Sep. 2009 - May 2013
Brown University, Providence, RI
Honors: *magna cum laude*
Advisor: Dr. Antal Jevicki
Senior Thesis: Quantization of symmetric spaces

Publications and Pre-prints

M. D. Collins and A. Ramamurti, *Parabolic equation modeling of Scholte waves and other effects along sloping fluid-solid interfaces*, Journal of Theoretical and Computational Acoustics **29**, 2050025 (2021), arXiv:2005.10748 [physics.comp-ph].

A. Ramamurti and D. C. Calvo, *Multisector Parabolic Equation Method for Scattering From Impenetrable Objects in Fluid Waveguides*, IEEE Access **9**, 45068 (2021).

A. Ramamurti, *Application of machine learning in Bose-Einstein condensation critical-temperature analyses of path-integral Monte Carlo simulations*, arXiv:1912.06654 [cond-mat.stat-mech].

A. Ramamurti and D. C. Calvo, *Multisector parabolic equation approach to compute acoustic scattering by noncanonically shaped impenetrable objects*, Physical Review E **100**, 063309 (2019), arXiv:1912.02406 [physics.comp-ph].

A. Ramamurti and E. Shuryak, *Extending the hydrodynamical description of heavy-ion collisions to the "outer edge" of the fireball*, arXiv:1811.03655 [hep-ph].

A. Ramamurti and E. Shuryak, *Chiral symmetry breaking and monopoles in gauge theories*, Physical Review D **100**, 016007 (2019), arXiv:1801.06922 [hep-ph].

A. Ramamurti, E. Shuryak, and I. Zahed, *Are there monopoles in the quark-gluon plasma?*, Physical Review D **97**, 114028 (2018), arXiv:1802.10509 [hep-ph].

A. Ramamurti and E. Shuryak, *Role of QCD monopoles in jet quenching*, Physical Review D **97**, 016010 (2018), arXiv:1708.04254 [hep-ph].

A. Ramamurti and E. Shuryak, *Effective model of QCD magnetic monopoles from numerical study of one- and two-component Coulomb quantum Bose gases*, Physical Review D **95**, 076019 (2017), arXiv:1702.07723 [hep-ph].

I. Iatrakis, A. Ramamurti, and E. Shuryak, *Pomeron interactions from the Einstein-Hilbert action*, Physical Review D **94**, 045005 (2016), arXiv:1602.05014 [hep-ph].

I. Iatrakis, A. Ramamurti, and E. Shuryak, *Collective string interactions in AdS/QCD and high-multiplicity pA collisions*, Physical Review D **92**, 014011 (2015), arXiv:1503.04759 [hep-ph].

Talks and Conferences

181st Meeting of the Acoustical Society of America — Dec. 2021
Seattle, WA
Reconstruction of sparse ocean noise fields with generative neural networks
Abstract: J. Acoust. Soc. Am. **150**, A123 (2021)

178th Meeting of the Acoustical Society of America — Dec. 2019
Coronado, CA
Application of a multi-sector parabolic equation approach to compute acoustic scattering by non-canonically shaped impenetrable objects
Abstract: J. Acoust. Soc. Am. **146**, 3037 (2019)

Gauge Topology III: From Lattice to Colliders — May 2018
European Center for Theoretical Physics, Trento, IT
Recent progress in understanding the role of monopoles in QCD

JETSCAPE Winter School and Workshop — Jan. 2018
Lawrence Berkeley National Lab, Berkeley, CA
The role of QCD monopoles in jet quenching

Stony Brook Nuclear Theory Seminar — Nov. 2017
Stony Brook University, Stony Brook, NY
The role of QCD monopoles in jet quenching

XXVIth International Conference on Ultrarelativistic Nucleus-Nucleus Collisions (Quark Matter 2017) — Feb. 2017
Chicago, IL
An effective model of QCD monopoles
Proceeding: Nuclear Physics **A 967**, 868-871 (2017), arXiv:1704.04467 [hep-ph].

Gauge Field Topology Workshop — Aug. 2015
Simons Center for Geometry and Physics, Stony Brook, NY
QCD strings and their interactions from the holographic perspective

Honors and Awards

Jerome and Isabella Karle Fellowship — Nov. 2018 - Nov. 2020
U.S. Naval Research Laboratory, Washington, DC

Mildred G. Widgoff Prize for Excellence in Thesis Preparation — May 2013
Physics Department, Brown University, Providence, RI

Other Employment

Graduate Research Assistant	Jan. 2016 - Nov. 2018
Dept. of Physics and Astronomy, Stony Brook University	May 2015 - Aug. 2015
Stony Brook, NY	May 2014 - Aug. 2014
Graduate Teaching Assistant	Aug. 2015 - Dec. 2015
Dept. of Physics and Astronomy, Stony Brook University	Aug. 2014 - May 2015
Stony Brook, NY	
Undergraduate Research Assistant	May 2012 - Aug. 2012
Physics Department, Brown University	May 2011 - Aug. 2011
Providence, RI	
Physical Science Aid	Dec. 2010 - Jan. 2011
Acoustics Division, U.S. Naval Research Laboratory	Jun. 2008 - Aug. 2008
Washington, DC	Jun. 2007 - Aug. 2007

Skills

Programming Languages and Software

- Expert: C++, Python, Unix shell (bash, tcsh), Mathematica, LaTeX
- Intermediate: Fortran, Java, MATLAB, COMSOL Multiphysics

Programming Techniques

- Expert: Parallelization (MPI, openMP), numerical simulation (Monte Carlo methods, finite difference methods)
- Intermediate: Machine learning, neural networks, GPU programming