U.S. NAVAL RESEARCH LABORATORY

COMPUTATIONAL MECHANICS AND STRUCTURAL ACOUSTICS

Postdoc Position

OVERVIEW:

The Theoretical and Computational Acoustics Section in the Physical Acoustics Branch at the Naval Research Laboratory in Washington DC is looking for postdoctoral researchers with a background in computational mechanics. This research opportunity broadly involves development of physics-based computational approaches for accurate solution of wave-dominated problems, including propagation and scattering of acoustics and elastic waves with complex geometries and materials. Research topics could be, but are not limited to, new mathematical formulations for scattering from structures with geometric and/or material complexity; novel high-order discretization techniques; scalable solution techniques for indefinite ill-conditioned system of linear equations, error-estimation, mesh generation and a-posteriori adaptation; adjoint-based sensitivity and uncertainty quantification for coupled elasto-acoustics problems. The ability to develop and implement algorithms related to the above topics is a definite plus.

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MINIMUM QUALIFICATIONS:

- PhD in Physics, Engineering and/or Applied Mathematics. Minimum GPA 3.0.
- Strong publication record in numerical methods or computational mechanics.
- Strong scientific programming skill including programming in C, C++, and/or Python.
- U.S. Citizenship required. Must be able to obtain DoD Security Clearance.

DESIRED QUALIFICATIONS:

- Background in structural mechanics with application to one of these areas: fatigue and damage, wave structure interaction, inverse problems of elasticity.
- Experience designing and implementing algorithms for high-order finite-element type discretization and their scalable solution on high-prformance computers.
- Experience with distributed computing platforms using MPI.

Keywords:

Elasticity, Acoustics, Fatigue, Damage, Finite elements, adjoint-based methods, scalable linear solvers, high-performace computing.

Postdoc positions typically last for 2-3 years. The stipend for the position is ~76k annually. For additional information visit https://hroffice.nrl.navy.mil/jobs/postdoc.htm. Please submit a cover letter as well as a C.V. to saikat.dey@nrl.navy.mil.

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