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Description

Job Title	Modeling Shock Compaction of Granular Materials Postdoc
Location	Los Alamos, NM, US
Organization Name	T-3/Fluid Dynamics And Solid Mechanics
Minimum Salary	
Maximum Salary	

What You Will Do

The Solid Mechanics—Damage and Failure team, within T-3 group of the Theoretical Division, is seeking a highly motivated and productive postdoc candidate to accomplish advancements in the area of shock compaction, with a focus on simulating the microstructure evolution of granular materials using explicit 3D microstructures. You will learn to skillfully use a Lagrangian hydrocode, develop high-performance simulations of granular compaction, quantify and make inferences on the energy dissipation mechanisms, and thoroughly assess the ability of continuum shock-compaction constitutive models in reproducing the realistic compaction behavior. You will be responsible for demonstrating credible simulation results—numerically accurate and comparable with experimental datasets. You will develop and apply (a) pre-processing techniques for generating statistically-meaningful granular microstructures, which may include image analysis of data from X-ray computational tomography, and (b) post-processing statistical analysis techniques, in addition to instructional visualization of simulated data. Engage in weekly communication of accomplishments with the primary mentor, contribute know-how in technical discussions, fulfill technical goals, and satisfy required deliverables, such as codes, models and know-how in the form of LANL reports, peer-reviewed publications, presentations, and software. Follow LANL safety and security procedures.

What You Need

Minimum Job Requirements:

Knowledge and/or experience in the following topics:

- Compaction of powder, granular, or porous materials.
- Shock compression: Equation of state

- Phenomenological constitutive modeling in shock compaction, e.g. P-alpha models.
- Experience in Fortran, and any other programming languages and statistical analysis tools.
- Excellent written and oral communication skills

Education/Experience: A Ph.D. in Mechanical Engineering, Solid Mechanics, Aerospace Engineering, Civil Engineering or related fields is required. The candidate must be within 5 years of completion, and will have completed all Ph. D. requirements by commencement of the appointment.

Desired Qualifications:

Strong knowledge or willingness to learn and apply following topics or techniques:

- Mesoscale modeling or explicit microstructure simulations of a granular material.
- Simulation on high-performance computing cluster.
- Abaqus finite element analysis
- Ability to work in a multi-disciplinary team setting
- Strong evidence of peer-reviewed journal publications and conference presentations.

Candidates with expertise in experimental mechanics of granular materials, but highly motivated to focus solely on modeling are also encouraged to apply.

Location: This position will be located in Los Alamos, NM.

COVID Vaccine:

The COVID vaccine is mandatory for all Laboratory employees, on-site contractors, and on-site subcontractors unless granted an accommodation under applicable state or federal law. This requirement will apply to those working on-site, those teleworking, and all new hires.

Note to Applicants:

Include current C.V., three professional references, and a cover letter. The postdoc appointment is valid for two years.

Where You Will Work

Located in beautiful northern New Mexico, Los Alamos National Laboratory (LANL) is a multidisciplinary research institution engaged in strategic science on behalf of national security. Our generous benefits package includes:

- PPO or High Deductible medical insurance with the same large nationwide network
- Dental and vision insurance
- Free basic life and disability insurance
- Paid childbirth and parental leave
- Award-winning 401(k) (6% matching plus 3.5% annually)
- Learning opportunities and tuition assistance
- Flexible schedules and time off (paid sick, vacation, and holidays)
- Onsite gyms and wellness programs
- Extensive relocation packages (outside a 50 mile radius)

Additional Details

Directive 206.2 - Employment with Triad requires a favorable decision by NNSA indicating employee is suitable under NNSA Supplemental [Directive 206.2](#). Please note that this requirement applies only to citizens of the United States. Foreign nationals are subject to a similar requirement under DOE Order 142.3A.

No Clearance: Position does not require a security clearance. Selected candidates will be subject to drug testing and other pre-employment background checks.

New-Employment Drug Test: The Laboratory requires successful applicants to complete a new-employment drug test and maintains a substance abuse policy that includes random drug testing.

Equal Opportunity: Los Alamos National Laboratory is an equal opportunity employer and supports a diverse and inclusive workforce. All employment practices are based on qualification and merit, without regard to race, color, national origin, ancestry, religion, age, sex, gender identity, sexual orientation or preference, marital status or spousal affiliation, physical or mental disability, medical conditions, pregnancy, status as a protected veteran, genetic information, or citizenship within the limits imposed by federal laws and regulations. The Laboratory is also committed to making our workplace accessible to individuals with disabilities and will provide reasonable accommodations, upon request, for individuals to participate in the application and hiring process. To request such an accommodation, please send an email to applyhelp@lanl.gov or call 1-505-665-4444 option 1.

Employment Status **Full Time**
Appointment Type **Postdoc**
Postdoc

Contact Details

Contact Name
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