

Job Offer

Chemistry and material technology determine life and working environment of our society. The mission of the BAM Federal Institute of Materials Research and Testing is to deploy technology in a safe and environmentally friendly way. We test substances, materials and components as well as natural and fabricated systems; we check their reliability, develop test methodologies and essential test procedures and standards. We offer a unique research and learning environment with a long tradition in analysis and assessment of manageability and use of technical progress. Approximately 1700 employees (including permanent and temporary staff, apprentices and trainees) conduct research at BAM in the fields of technology and chemistry, assessing and limiting risk. BAM is a technical and scientific superior authority of the Federal Ministry of Economics and Energy (BMWi).

BAM's Division 7.2 "Buildings & Structures" in Berlin-Lichterfelde, Germany
invites applications for a

PostDoc position

Pay grade 13 TVöD
24 months fixed-term contract
starting date: as early as possible

Job Description:

This project is concerned with the **development of numerical models for the analysis of offshore foundations with special emphasis on Suction Buckets**. The theoretical basis of the models used lies in the constitutive modeling of cyclic soil behavior in the frame of General Plasticity. A coupled model for laterally loaded piles and gravity foundations has been developed previously. In a research project the model has to be extended for different foundation types incorporating suction effects. The modeling of the tangential component at the interface caisson wall/soil has to be modified for cyclic loading. The final aim is to simulate the behavior of suction caissons of a monitored structure under realistic loading conditions.

The following aspects should be investigated

- 3D modeling of suction caissons with a given program code
- Extension of the model for shaft friction
- Assessment of design load cases
- Validation of foundation behavior with real monitoring data
- Simplified procedures for the consideration of coupled analysis

Profile requirements:

- successfully completed PhD at university level in either geotechnical engineering, mechanical engineering or similar fields
- advanced knowledge in continuum mechanics and constitutive modeling of soils
- experience in the implementation of Finite Element Methods (user-defined constitutive and element routines) and programming experience (C++ or Fortran) is of advantage
- above-average commitment, own initiative and the capability to independently carry out scientific work, good communication skills and ability to adapt to a team in an interdisciplinary surrounding
- very good knowledge of either English or German

For research-related questions please contact Dr. Matthias Baeßler via email (matthias.baessler@bam.de) or telephone (+49 30 8104 1724).

BAM is trying to increase the percentage of women in academic positions and thus encourages suitably qualified women to apply. Suitably qualified seriously handicapped candidates will be given preference; they need only to meet minimum physical requirements.

Please submit your application, quoting reference number 227/14 – 7.2., at latest until January 16th 2015, by post to the following address:

BAM Federal Institute for Materials Research and Testing, Division Z.3, reference number 227/14-7.2., Unter den Eichen 87, 12205 Berlin, Germany