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Y. Petryna, M. Link. A. Kunzel

Modeling and Monitoring of Damage in Grouted Joints

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The present contribution is directed towards the concept of a reliable SHM system for grouted joints of the offshore wind turbines. It focuses on static and dynamic tests of a laboratory structure with a grouted joint, on a proper finite element modelling of its behaviour and damage progress. The entire structure as well as the joint itself is subjected to static and dynamic tests.

The material and structural model is validated by comparison with experimental data and non-destructive testing of the joint. Then, suitable physical parameters to be monitored are identified and introduced into the structural model. Their real values are finally determined from the measurement data of static and dynamic laboratory tests by means of suitable identification techniques.

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Ключевые слова:

Содержание

Abstract
Introduction
Real structure and loading
Laboratory structure
Model update for grouted joints
Parameter evaluation from static tests
Ongoing research