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AMD AHL

Nonlinear Analysis of Offshore Structures

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Civil and Structural Engineering Series

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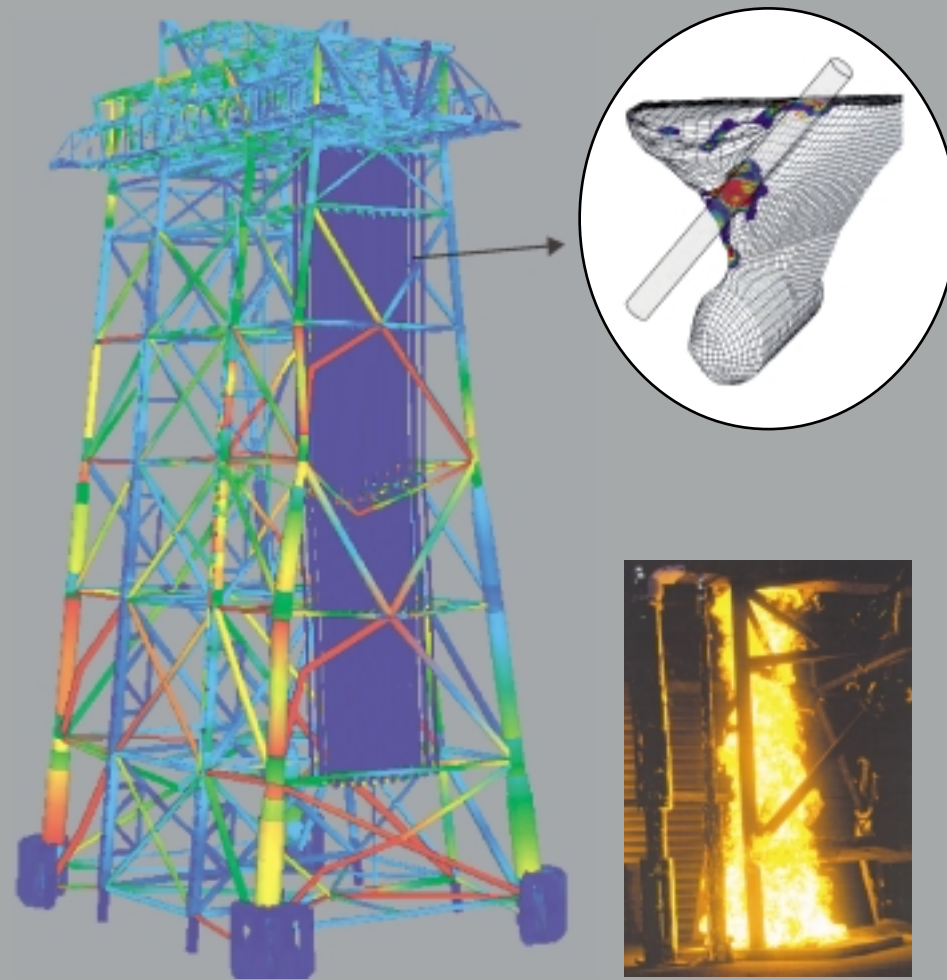
Nonlinear Analysis of Offshore Structures B. Skallerud and J. Amdahl

Advanced methods for analysis of offshore structures subjected to extreme loads, such as abnormal waves, ship collision and fires are addressed in this book.

The basic principles of continuum mechanics and finite element methods are presented. The main focus is placed on the behaviour of typical offshore components, for example: tubular beams/beam-columns and joints, stiffened plates and systems, jacket, jack-ups and semi-submersibles.

The authors have gained extensive experience through research and development in the areas of ultimate strength and progressive collapse analysis of offshore structures. Over the past two decades they have carried out laboratory testing of structural components and sub-systems, developed software for numerical analysis and been involved with the practical design of structures against accidental events.

Both authors have contributed significantly to the development of rules and guidelines, notably the NORSOK Standard N-004.



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Bjørn Skallerud
and
Jørgen Amdahl

Offshore Structure Design, Construction and Maintenance covers all types of offshore structures and platforms employed worldwide. The ultimate reference for selecting, operating and maintaining offshore structures, this book provides a road map for designing structures which will stand up even in the harshest environments. The selection of the proper type of offshore structure is discussed from a technical and economic point of view.Â Nonlinear analysis (Push over) analysis will be presented as a new technique to design and assess the existing structure. Pile design and tubular joint with the effect of fatigue loading will be presented also from a theoretical and a practical point of view.