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Frontiers in Civil Engineering Stability of Geotechnical Structures: Theoretical and Numerical Analysis

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Stability of Geotechnical Structures: Theoretical and Numerical Analysis is a comprehensive introduction to the theory and applications of soil mechanics in structural stability. Topics covered in the book include upper and lower bound methods, kinematic methods, slip line methods, limit analysis, limit equilibrium, and element methods. The book also features worked examples for easy understanding. Theoretical material in the book is based on actual research conducted by the authors, with additional literature reviews and discussions about important topics in geotechnical engineering. This book is suitable for students undertaking advanced foundation or geotechnical engineering courses at undergraduate or post-graduate levels.

Contents

▸ Upper and Lower Bound Approaches

▸ Slip Line, Limit Equilibrium and Limit Analysis Methods

▸ Numerical Methods – Finite Element and Distinct Element Methods

▸ Numerical Techniques for Solution of Stability Problems

▸ Applications of Plasticity Theory and Limit Analysis to the Bearing Capacity of Shallow Foundations

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