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STRESS PATH METHOD: SECOND EDITION

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INTRODUCTION

More than a decade ago the first writer (1) proposed the stress path method. The writers have used it extensively in their teaching and practice of geotechnical engineering. This experience has shown us both the power and the limitations of the stress path method. The present paper reviews our perception of the method in its current form.

The stress path method consists of a systematic approach to elucidating and solving geotechnical engineering problems. In particular, the method can help the engineer to: (1) Clarify a geotechnical situation; (2) solve a geotechnical problem; and (3) express the solution in a fashion useful to the engineer.

Primarily, the stress path method helps the geotechnical engineer identify and interrelate the fundamentals underlying a geotechnical engineering situation involving force, deformation, stability or fluid-flow. The method can help the engineer identify the mechanisms and choose the appropriate methods and parameters for solving a problem. Secondarily, the stress path method enables one to obtain and portray a numerical solution to a geotechnical engineering problem.

On important and complex problems, we use the following procedure: (1) Use the stress path method to examine a problem and to obtain an approximate solution; (2) use the stress path method to select an analytical procedure and to determine parameters for a more refined solution, e.g., we run stress path tests to obtain soil parameters for use in a finite element method; and (3) having the results from the more refined solution, we select an "average" element and portray the solution in terms of stress paths for this average element.