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## BOOK REVIEW SECTION

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### Publications Available for Review

By Charles H. McElroy,  
Book Review Editor

#### Call for Reviewers

STM has received several new geotechnical publications. If you are interested in reviewing one of them and preparing a book review to be published in a future issue of GTJ, please contact Ms. Barbara Stafford, ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, Phone 610-832-9621, FAX 610-832-9623. Once we have received your inquiry, I will mail you the book along with the GTJ guidelines for book reviews. The book is yours to keep or dispose of, however you see fit. For the review to be timely, we would appreciate receiving it in six months or less.

#### Books Available:

*Bifurcation Analysis in Geomechanics* by I. Vardoulakis and J. Sulem, Blackie Academic & Professional, Water Cleddens, Bishopbriggs, Glasgow G64 2Z, UK, 1995, 459 pp.

These authors utilize versatile numerical techniques to examine the experimental and theoretical aspects of the pre-failure and post-failure behavior of geomaterials within the framework of bifurcation theory. Coverage includes basic continuum mechanics for both dry and fluid infiltrated porous media, bifurcation and stability analyses applied to layered geologic media and granular materials. Also included are theories for generalized continua (Cosserat and gradient theories) as applied to materials with microstructure and in relation to strain localization phenomena. This technology has been successfully used in the petroleum industry to solve very important questions of scale dependency in several rock mechanical tests.

ISBN: 0-7514-0214-1

*Seismic Design and Retrofit of Bridges* by M. J. N. Priestley, F. Seible, and G. M. Calvi, John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158-0012, 1996, 686 pp.

The authors begin their book with an in-depth treatment of seismic design philosophy as it applies to bridges. They describe in detail the seismic effects of actual earthquakes on local area bridges as well as the geotechnical considerations specific to bridge design, such as soil-structure interaction and traveling wave effects. As a basis for their design strategies, the authors focus on the widely accepted capacity design approach in which particularly vulnerable locations of potentially inelastic flexure deformation are identified and strengthened to accommodate a greater degree of stress. The book is practical and application oriented and is enhanced by several photos and line drawings that help explain key concepts and design procedures.

ISBN: 0-4715-7998-X

*Soil Mechanics in Engineering Practice* by Karl Terzaghi, Ralph B. Peck, and Gholamreza Mesri, John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158-0012, 1996, 549 pp.

The authors have separated the book into three parts. Part I deals with the physical properties of soils and has been expanded markedly over that of the previous editions. Findings are presented from a fundamental point of view rather than representing any one particular school of thought. Part II on theoretical soil mechanics has been expanded only slightly from previous editions because the essential theoretical tools were already available 50 years ago. The development of finite element and other similar procedures, although changing the mode of many calculations, has not altered this fact. As in past editions, Part III deals with the art of getting satisfactory results in earthwork and foundation engineering at a reasonable cost in spite of the many unknowns, uncertainties, and complexities encountered. Ground improvement, foundations, settlement due to external causes, dams and dam foundations are covered in detail in this part devoted to applications. The discussions on the use of synthetic membranes and geotextiles in dams are of special interest.

ISBN: 0-471-08658-4