BOOKS

Developments in Mechanics, Vol. 5, Proceedings of the 11th Midwestern Mechanics Conference, H. J. Weiss, D. F. Young, W. F. Riley, and T. R. Rogge, editors, The Iowa State University Press, Ames, Iowa (1969), 1001 pages. $22.50.

This book is a useful collection of research and review papers in many areas of fluid and solid mechanics. There are fifty-eight papers in all, covering a wide range of topics of practical and/or mathematical interest.

The papers on fluid mechanics (seventeen in all) include theoretical analyses of two-phase flow, viscoelastic flow, boundary-layer flow, blood flow, time-dependent flow, and flows in electric or magnetic fields. There are also experimental studies in several of these areas.

The papers on solid mechanics (forty-one in all) include theoretical analyses of problems in stability, vibrations, thermal stresses, creep, and rheology of solids and soils. There are also several primarily experimental studies.

The book is noteworthy for the variety of mathematical techniques it contains. Included are applications of stability analysis, weighted residuals, finite elements, finite differences, regular perturbations, variational calculus, integral transforms, and optimal control theory.

Few of the papers are of direct interest to chemical engineers. However, those interested in modern computational techniques will find some recent ones well illustrated here.

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