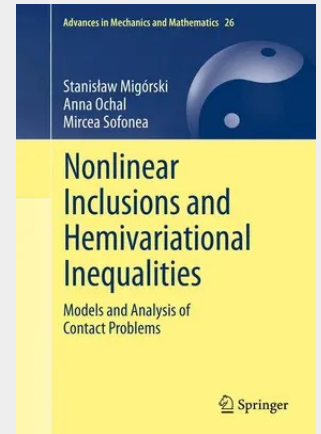


Nonlinear Inclusions and Hemivariational Inequalities

Models and Analysis of Contact Problems

This book introduces the reader the theory of nonlinear inclusions and hemivariational inequalities with emphasis on the study of contact mechanics. The work covers both abstract results in the area of nonlinear inclusions, hemivariational inequalities as well as the study of specific contact problems, including their modelling and their variational analysis. Provided results are based on original research on the existence, uniqueness, regularity and behavior of the solution for various classes of nonlinear stationary and evolutionary inclusions. In carrying out the variational analysis of various contact models, one systematically uses results of hemivariational inequalities and, in this way, illustrates the applications of nonlinear analysis in contact mechanics. New mathematical methods are introduced and applied in the study of nonlinear problems, which describe the contact between a deformable body and a foundation. Contact problems arise in industry, engineering and geophysics. Their variational analysis presented in this book lies the background for their numerical analysis. This volume will interest mathematicians, applied mathematicians, engineers, and scientists as well as advanced graduate students.

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