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Weimin Han* (weimin-han@uiowa.edu), Department of Mathematics, Iowa City, IA 52242. *An Introduction to Numerical Analysis of Hemivariational Inequalities.*

Inequality problems represent a family of challenging mathematical models with important applications in sciences and engineering. The inequalities in applications can be divided into two main categories: that of variational inequalities concerned with convex functionals (potentials), and that of hemivariational inequalities concerned with nonconvex functionals (superpotentials). Through the formulation of hemivariational inequalities, many problems involving nonmonotone, nonsmooth and multivalued relations among physical quantities can be treated successfully. This talk introduces hemivariational inequalities arising in contact mechanics, results on convergence and optimal order error estimates for numerical solutions of hemivariational inequalities, and numerical simulation results. (Received August 07, 2021)