Quasistatic Variational Inequalities: Theory, Numerical Solution and Applications in Mechanics

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We present theoretical and numerical results on the study of a family of quasistatic variational inequalities. Such variational inequalities arise in several application areas, such as elastoplasticity and contact mechanics. We provide well-posedness results for the variational inequalities, and discuss their numerical solutions, including a priori and a posteriori error estimations. Numerical examples will be shown to illustrate performance of the numerical methods.