

Analysis and approximation of evolutionary quasi-variational inequalities

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Time evolution quasi-variational inequalities (QVIs), of parabolic and hyperbolic type, arise as mathematical formulation of phenomena in diverse fields on applied sciences such as continuum mechanics, superconductivity and hydrology. Despite the formulation similarity with variational inequalities (VIs), the literature concerning QVIs is rather scarce, specially in relation to approximation methods that take into account the function space nature in many applications. We provide recent results concerning regularity and approximation of solutions based on several algorithmic approaches that include semismooth Newton and splitting methods. We also report on various numerical tests.