1011-49-297   **Gianni Dal Maso*** (`dalmaso@sissa.it`), via Beirut 4, 34014 Trieste, Italy. *Rate-Independent Evolution Problems in Elasto-Plasticity: a Variational Approach.*

The problem of quasistatic evolution in small strain associative elastoplasticity is studied in the framework of the variational theory for rate-independent processes. Existence of solutions is proved through the use of incremental variational problems in spaces of functions with bounded deformation. This provides a new approximation result for the solutions of the quasistatic evolution problem, which are shown to be absolutely continuous in time. Equivalent formulations of the problem in rate form are derived. A strong formulation of the flow rule is obtained by introducing a precise definition of the stress on the singular set of the plastic strain. (Received August 30, 2005)

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