



A PM SPACE MODEL OF IRREVERSIBLE CHANGES IN MATERIALS SUBJECT TO LOADING

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The Preisach-Mayergoyz (PM) approach has been widely used to describe hysteresis in different fields. Among these, various types of reversible hysteretic elastic behavior have been successfully modelled including quasi-static, fast and slow dynamics, modulation, and so on. Here, we propose an approach to extend the PM formulation to also treat irreversible phenomena such as fatigue and damage progression. For this purpose, we introduce a multi-level scheme based on nested PM descriptions. The mathematical formulation is outlined and a phenomenological application presented.