

## Constitutive equation of the SMA based on the plasticity-like model

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Construction of the proper constitutive model of the Shape Memory Alloy(SMA) is essential for the simulation of the SMA thermo-mechanical structural behavior, such as SMA actuator or SMA morphing wing, which can contribute to the reduction of the time and cost during design process. Several kind of the constitutive equations have been proposed. However, not only the accuracy of the constitutive equation, but also the easiness of the implementation based on the experiment results is important in engineering viewpoint. In this study, we propose the new constitutive equation of the SMA based on the plasticity-like model. Isotropic hardening is applied to describe non-linear behavior during the phase transformation. Multiple transformation surfaces, which is equivalent to yield surface in the plasticity, are introduced to handle not only the phase transformation from austenite to martensite, but also the reverse phase transformation.