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Modeling the Cyclic Shape Memory and Superelasticity of Selective Laser Melting Fabricated NiTi

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Highlights:

- The available SMA constitutive model based on microplane theory is develop to take the cyclic response into account
- The predicted cyclic response of NiTi compression samples fabricated by SLM is in good agreement with those obtained experimentally through both superelastic and shape memory regimes.
- The material parameters of the model can be obtained using just the first and the accumulated uniaxial stress-strain response of SMA.

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