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A Model for the Hysteresis of Shape Memory Wires

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We study the hysteretic behavior of shape memory wires under repetitive loading cycles. Our model is constituted by a chain of bi-stable elements whose elastic energy varies with the loading history to take into account the modifications of the material properties associated to the phase transition processes. The hysteretic behavior of this simple, predictive model reproduces important phenomena observed in the cyclic experiments of shape memory wires.

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