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Volume 25, Issue 1-2, September 2002, Pages 1-13

### On the dynamic behaviour of elastic-plastic structures equipped with pseudoelastic SMA reinforcements (Conference Paper)

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**Abstract**

In the paper the dynamics of a structural elastic-plastic frame, endowed with pseudoelastic shape memory alloy (SMA) tendons and subject to some vertical and horizontal loading conditions, are analysed. A wide numerical investigation is carried out in order to show how SMAs are able, more than ordinary or other special materials, to give to the structure good dissipative skill and high re-centering capacity. At this aim, some comparisons are presented with the cases of a simple oscillator, of a frame with elastic-plastic tendons and of a frame with unilateral elastic-plastic tendons unable to sustain compression. © 2002 Elsevier Science B.V. All rights reserved.

**Author keywords**

Centering skill, Dynamic analysis, Earthquake engineering applications, P-Δ effect, Pseudoelasticity, Shape memory alloys

**Indexed keywords**

**Engineering controlled terms:** Compressibility; Elastoplasticity; Numerical analysis; Oscillators (mechanical); Reinforcement  
**Engineering uncontrolled terms:** Elastic-plastic structures  
**Engineering main heading:** Shape memory effect

ISSN: 09270256 CODEN: CMASE Source Type: Journal Original language: English  
 DOI: 10.1016/S0927-0256(02)00245-8 Document Type: Conference Paper

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**PACS**

81.05.Bx; 43.40.Ai; 43.40.Tm

**Keywords**

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