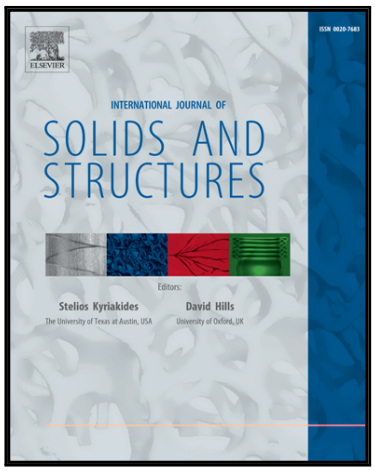

Thermodynamics-based finite strain viscoelastic-viscoplastic model coupled with damage for asphalt material.

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PII: S0020-7683(17)30424-9
DOI: 10.1016/j.ijsolstr.2017.09.014
Reference: SAS 9731

To appear in: *International Journal of Solids and Structures*

Received date: 11 October 2016
Revised date: 25 April 2017
Accepted date: 11 September 2017

Please cite this article as: F. Chen, R. Balieu, N. Kringos, Thermodynamics-based finite strain viscoelastic-viscoplastic model coupled with damage for asphalt material., *International Journal of Solids and Structures* (2017), doi: 10.1016/j.ijsolstr.2017.09.014

Highlights

- A thermodynamics-based model under the finite strain framework is proposed.
- Thermo-viscoelastic-viscoplastic behaviors coupled with damage are well predicted.
- The response difference between in tension and in compression is captured.
- Permanent deformation damage of a practical pavement structure is simulated.