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Theoretical Equations of State for Porous/Granular Materials¹

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Although the equation of state (EOS) for a porous/granular material is identical to the EOS for the equivalent non-porous material, the requirement that the EOS must provide a realistic model of the material in its porous/granular state adds additional challenges for EOS modelers. These difficulties can be divided into two broad categories. First, dynamic processes often drive porous/granular materials through regions of thermodynamic phase space that are poorly described by standard wide-ranging tabular EOS. Second, for materials that are only available in a granular form, it can be difficult to accurately measure the material properties/parameters that are routinely used to constrain a theoretical EOS. This talk will attempt to describe in some detail the many challenges posed to EOS modelers by porous/granular materials.

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