Special Issue

Advances in Constitutive Modeling for Metals and Alloys

Message from the Guest Editors

To describe and refine the description of the visco-plastic behaviour of the material and to evaluate the plastic strain and sometimes the stress triaxiality, the latter to determine the damage evolution inside the material, especially in tensile loading where premature failure can occur at limited strains, it is of the primary importance to identify the more appropriate analytical model. Sometimes, the models available in the literature are not appropriate and require improvement to better reproduce the experimental evidence and the physical behaviour of the material. This Special Issue aims to present constitutive material models related to numerical modeling through finite element analysis, model parameter optimizations, and their improvement. Papers on constitutive models of metals and alloys as well as papers on metals produced by additive manufacturing and their behaviour at high strain rates are welcome. Calibration methodologies are also of interest for this special issue.

- constitutive models
- visco-plastic behaviour
- metals alloys
- metals testing
- calibration procedure
- finite element analysis

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About the Journal

Message from the Editor-in-Chief

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

Editor-in-Chief

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