Applying Machine Learning and Data-Driven Methods to High-Velocity Penetration and Dynamic Material Modeling

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Message from the Guest Editors

Dear Colleagues,

In order to predict high-velocity impact processes by simulations, the involved highly dynamic material behavior of projectiles and targets has to be captured appropriately in numerical or analytical models. Traditionally, such material models have been formulated in terms of simple analytical formulas that describe the phenomenology of a set of specialized material tests. An era of digitalization, however, has opened up the possibility for innovative and less biased approaches to the modeling of dynamic material behavior by means of data-based methods, machine learning, and other techniques from the field of artificial intelligence.

The current scientific literature reflects the coming up of such data-driven methods for ballistics and material dynamics, yet this advancement is still in its infancy. We would therefore like to invite you to contribute to the state of the science by submitting your manuscript to this Special Issue. The focus lies in applications of machine learning and data-driven methods to high-velocity penetration and dynamic material modeling by numerical or engineering methods.

Special Issue

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Message from the Editor-in-Chief

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