Contribution ID: **52** Type: **Poster**

Deep Neural Networks for Hyperbolic Conservation laws with Non-convex Flux

Wednesday, July 29, 2020 7:30 PM (1 hour)

In this work, we investigate the capabilities of deep neural networks for solving hyperbolic conservation laws with non-convex flux functions. The behavior of the solution of these problems depends on the underlying small scale regularization. In many applications concerning phase transition phenomena, the regularization terms consist of diffusion and dispersion which are kept in balance in the limit. This may lead to the development of both classical and nonclassical (or undercompressive) shock waves at the same time which makes finding the solution of these problems challenging from both theoretical and numerical points of view. Here, as a first step, we consider a scalar conservation law with cubic flux function as a toy model and investigate the capabilities of physics-informed deep learning algorithms for solving this problem.

Primary author: Dr MINBASHIAN, Hadi (Technical University of Darmstadt)

Presenter: Dr MINBASHIAN, Hadi (Technical University of Darmstadt)

Session Classification: Posters 2