Discontinuous Galerkin methods and basis enrichment using neural networks

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The Discontinuous Galerkin method is a high-order accurate numerical scheme to solve hyperbolic systems. In this talk, we will present a strategy to take advantage of the recent development of neural networks to enhance the method's precision around a parametric family of equilibria. The method is based on introducing a prior solution inside the basis, which can be estimated using Physic Informed Neural Networks (PINNs).

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