DISCONTINUITY COMPUTING
WITH PHYSICS-INFORMED NEURAL NETWORK

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How to simulate shock waves and other kind of discontinuities is a long history topic. As a new and booming method, the physics-informed neural network (PINN) is still weak in calculating shock waves than traditional shock-capturing methods. In this paper, we propose a "retreat in order to advance" way to improve the shock capturing ability of PINN by using a weighted equations (WE) method with PINN. In this paper, we study one-dimensional and two-dimensional Euler equations. And illustrated by the comparisons with high-order classical WENO-Z method in numerical examples, the proposed method can significantly improve the discontinuity computing ability.