

# Global Existence Results for Eikonal System with BV Initial Data

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In this work, we study a non-linear eikonal system in one dimensional space. For this system, the global existence and uniqueness are available only of continuous viscosity solutions in some particular cases. Here, we are interested in the study of the global in time existence of this system, considering BV initial data. Based on fundamental uniform BV estimate and the finite speed propagation property of this system, we show, in a particular setting, global existence results of discontinuous viscosity solutions of this problem. The dynamics of dislocation densities and the dynamics of gas are two interesting applications in this framework[1].

## Références

- [1] R. BOUDJERADA AND A. EL HAJJ, *Global existence results for eikonal equation with BV initial data*, Nonlinear Differ. Equa. Appl. 22, 2015.

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