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90k:35158 [35L60](#) ([35A20](#))

[Kupên, B.](#) [Gu, Ben] ([PRC-FUDAN-IM](#))

Reflection of singularities at boundary for piecewise smooth solutions to semilinear hyperbolic systems.

J. Partial Differential Equations **2** (1989), no. 1, 59–70.

The author considers an initial-boundary value problem for a 2×2 semilinear symmetric strictly hyperbolic system in a smooth (bounded) domain of \mathbf{R}^n and proves, using classical methods involving transformations and estimates of jump discontinuities, a result on reflection of singularities for piecewise smooth solutions corresponding to piecewise smooth initial values. More precisely: if for $t \leq 0$ the singularities of the solution propagate along a characteristic hypersurface S_1 , which reflects at the boundary into another characteristic hypersurface S_2 , then for small $t \geq 0$ the solution will remain piecewise smooth, and its singularities (whose order is proved to be preserved) will propagate along $S_1 \cup S_2$.

Reviewed by [Albert J. Milani](#)

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