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Hyperbolic Systems with Non-Convex Flux on Networks

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In this talk we consider hyperbolic systems of Temple type on networks. Without assumptions on the convexity of the flux we study the well-posedness of this problem. Adapting the results from Bianchini [1], we use the wave-front tracking algorithm to construct a solution in the class of arbitrarily large but bounded total variation. Therefore suitable estimates on the total variation and the interactions across the junction are needed. Further adjustments are made with techniques of [2].

References

[1] Bianchini, Stefano *The semigroup generated by a Temple class system with non-convex flux function. Differential Integral Equations*, 13(10-12): 1529–1550, 2000.

[2] Colombo, Rinaldo M., Rosini, Massimiliano D. *Well posedness of balance laws with boundary. J. Math. Anal. Appl.*, 311(2): 683–702, 2005.

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