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*Diffusion phenomena for partially dissipative hyperbolic systems*

**Abstract**

In this talk we consider hyperbolic systems with a partial dissipation affecting only some of the modes directly. We show that under suitable coupling properties (in form a Kalman rank condition imposed on the coefficient matrices) solutions have a diffusive structure und provide decay estimates for them as well as an adapted diffusion phenomenon. The result applies among others to the linearised damped Timoshenko system.

The talk is based on results from [2] with full proofs appearing in [1].

BIBLIOGRAPHY

- [1] M. Ruzhansky, J. Wirth, *Asymptotic Behaviour of Solutions to Hyperbolic Equations and Systems*, to appear in *Advanced Courses in Mathematics CRM Barcelona*, Birkhäuser, Preprint, arXiv:1203.3853
- [2] J. Wirth, *Diffusion phenomena for partially dissipative hyperbolic systems*, Preprint, arXiv:1110.0797