Hyperbolic equations and systems with non-regular coefficients

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Abstract This talk is a survey on some recent well-posedness results for weakly linear hyperbolic equations and systems with non-regular (less than Hölder) time dependent coefficients. First we focus on second order equations with distributional coefficients ([1] in collaboration with Michael Ruzhansky) then we pass to consider higher order equations and first order systems with bounded roots/eigenvalues [2]. A notion of very weak solution is introduced which is consistent with the classical Gevrey or ultra-distributional solution whenever it exists.

Bibliography

[1] Garetto, C. and Ruzhansky, M., *Hyperbolic second order equations with non-regular time dependent coefficients*, to appear in Arch. Rat. Mech. Appl., (2015).

[2] Garetto, C., *On hyperbolic equations and systems with non-regular time dependent coefficients*, http://arxiv.org/abs/1504.03716, (2015).