

COLÓQUIOS 2015
DEP. DE MATEMÁTICA

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FALARÁ SOBRE

**Dispersionless integrable systems in 3D and
Einstein-Weyl geometry
(based on joint work with Boris Kruglikov)**

For several classes of second-order dispersionless PDEs, we show that the symbols of their formal linearizations define conformal structures that must be Einstein-Weyl in 3D (or self-dual in 4D) if and only if the PDE is integrable by the method of hydrodynamic reductions. This demonstrates that the integrability of dispersionless PDEs can be seen from the geometry of their formal linearizations.

Based on:

E.V. Ferapontov and B. Kruglikov, Dispersionless integrable systems in 3D and Einstein-Weyl geometry, *J. Diff. Geom.* 97 (2014) 215-254.

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