



Colloquium del Departamento de Análisis Matemático

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“Lineability of nowhere monotone measures”

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Abstract:

We call a bounded signed Radon measure μ on a d -dimensional real space \mathbb{R}_d *nowhere monotone*, if both the positive and the negative variation of μ are positive on every open subset of \mathbb{R}_d . We show that the class of nowhere monotone measures on \mathbb{R}_d is residual and maximal dense-lineable in the space of Radon measures that are almost everywhere differentiable with respect to the d -dimensional Lebesgue measure. The techniques used to prove the maximal lineability part of the result are analogous to those used to prove maximal lineability of nowhere monotone everywhere differentiable real functions. The proof of dense-lineability relies on a recent result by L. Bernal-González and M. Ordóñez-Cabrera linking dense-lineability with the concept of *strong sets*.

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