Recent trends in harmonic and complex analysis



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Affine measures in harmonic analysis: geometric interpretations

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Affine measures have been introduced in the past to facilitate the study of Fourier Restriction and the related question of the L^p smoothing properties of averages along submanifolds (convolution Radon transforms). They capture in a geometric way the role of curvature. In this talk we present the Affine Measures and then discuss the geometric interpretation of these objects - a line of research that started with a result of D. Oberlin relating such measures to a Hausdorff-like ambient measure. We discuss some new results in the same spirit (this is joint work w/ J. Hickman): in particular, we give a geometric interpretation for the case of hypersurfaces with vanishing curvature. If time allows, we discuss how one could move on to study certain non-translation-invariant cases.

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