

# Characterization of ellipsoids via overdetermined boundary value problems

Nunzia Gavitone (Università degli studi di Napoli “Federico II”)

Joint work with B. Brandolini, C. Nitsch and C. Trombetti (Università degli studi di Napoli “Federico II”)

The aim of this talk is to describe some results related to the study of the optimal constant in an Hessian-type Sobolev inequality, which leads to a fully nonlinear boundary value problem, overdetermined with non standard boundary conditions. We show that all the solutions have ellipsoidal symmetry. In the proof we use the maximum principle applied to a suitable auxiliary function in conjunction with an entropy estimate from affine curvature flow.