

TITLES AND ABSTRACTS

Thematic Session on Geometric Measure Theory

Prezados,

- **Aldo Pratelli.** *Title:* The barycentric quantitative isoperimetric inequality.
Abstract: The quantitative isoperimetric inequalities, studied since the beginning of last century, are object of a great interest in the last 20 years, also because of their several applications. In short, such an inequality aims to determine how "close" to a ball must a set be, if its perimeter is almost minimal. While the "closeness" to a ball is often considered in terms of the Fraenkel asymmetry, i.e., as the volume of the symmetric difference with respect to the best approximating ball, another possibility (actually already used 30 years ago by Fuglede) is of considering the ball centered at the barycenter of the set. This gives rise to a similar inequality, easier to prove but somehow also easier to use. In particular, it is very interesting the open question to determining the planar sets which are optimal with respect to such an inequality, and it is very close to the analogous question (studied in particular by Cicalese-Leonardi in last 10 years) with the "classical" Fraenkel asymmetry. Many of the results of this talk have been obtained in collaboration with Gambicchia (Pisa) and Torres (Barcelona)..

Atenciosamente,

Stefano Nardulli, Paolo Piccione e Reinaldo Resende.