
BERN-FRIBOURG GRADUATE SEMINAR

a seminar for Master and PhD students

Thursday 3rd April, 2025: 17:15 - 18:00

Room 2.52, Perolles 08, Fribourg

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Tutorial: How to obtain Integral Inequalities in Euclidean Submanifold

Abstract

This seminar begins with a brief explanation of what I mean with the terminology “integral inequalities”. After recalling the isoperimetric inequality in \mathbb{R}^n and the definition of Schwartz rearrangement, a new Pólya-Szegő inequality (PSI) for submanifolds is presented, as well as a simplified proof in a particular case. Finally, I show how this PSI allows to translate a quite general class of integral inequalities in Euclidean spaces to integral inequalities in Euclidean submanifolds, satisfying an integral mean curvature condition.

Requirements: bachelor’s level differential geometry (or at least knowing what a submanifold is, the definition of “curvature” is not needed) and bachelor’s level analysis.