Texas Tech University - Department of Mathematics and Statistics
Seminar in Applied Mathematics

Extremal functions in modules of systems of measures

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ABSTRACT. We study Fuglede's p-modules of systems of measures in condensers in the Euclidean spaces. First, we generalize the result by Rodin that provides a way to compute the extremal function and the 2-module of a family of curves in the plane to a variety of other settings. More specifically, in the Euclidean space we compute the p-module of images of families of connecting curves and families of separating sets with respect to the plates of a condenser under homeomorphisms with some assumed regularity. Then we calculate the module and find the extremal measures for the spherical ring domain on polarizable Carnot groups and extend Rodin's theorem to the spherical ring domain on the Heisenberg group. Applications to special functions and examples will be provided.