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Artem Zvavitch: Comparison problems for bodies, measures and functions

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The Busemann-Petty problem asks whether symmetric convex bodies in R^n with smaller (n−1)-dimensional volume of central hyperplane sections necessarily have smaller n-dimensional volume. The answer to this problem is affirmative for n less or equal to 4 and negative starting from dimension 5. Several extensions of this result have been shown in the case of measures on convex bodies, and isomorphic results of the same type have been established. Moreover, the isomorphic Busemann-Petty problem is equivalent to the isomorphic slicing problem of Bourgain. In this talk we will discuss generalization of this problem to the comparison problems related to the Radon transform of functions and their L_p norms. Based on the joint work with Alexander Koldobsky and Michael Roysdon.

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