

Meeting: 1002, Pittsburgh, Pennsylvania, SS 10A, Special Session on Trends in Operator Theory and Banach Spaces

1002-52-116 **Artem Zvavitch*** (zvavitch@math.kent.edu), Department of Mathematical Sciences, Kent State University, 364 Mathematics and Computer Sciences Bldg, Kent, OH 44242. *The Busemann-Petty problem for arbitrary measures.*

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 $n \leq 4$ and negative for $n \geq 5$. In this talk we will solve the generalization of the Busemann-Petty problem to essentially arbitrary measure in place of the volume. We will also present applications of the latter result by proving several inequalities concerning the measure of sections of convex symmetric bodies in R^n . (Received September 09, 2004)