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Solutions to the 5th and 8th Busemann-Petty problems near the ball

In this talk we apply classical harmonic analysis tools, such as singular integrals and maximal functions, to two Busemann-Petty problems, numbers 5 and 8 in their famous list of 10 problems about convex bodies. We obtain local affirmative results for convex bodies that are close to the Euclidean ball in the Banach-Mazur distance.