

Fast decreasing polynomials

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The talk will discuss so called fast decreasing or pin polynomials and their applications. Such polynomials imitate as best as possible the Dirac delta by decreasing fast as we move away from a given point. Some sharp results and constructions on the real line go back to the 1980's and 1990's, but in the last 5 years or so it has turned out that fast decreasing polynomials have versions for sets on the plane, and these versions have a lot of applications, of which we shall review approximation on polytopes, sharp polynomial inequalities and asymptotics for Christoffel functions. We close the talk by new results that settle the problem of existence of fast decreasing polynomials at corners.