

MOMENTS AND POSITIVITY

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In classical moment theory one studies the moments of positive measures. We start with signed measures on the real axis and obtain conditions in terms of their moments and absolute moments for the measure to be non-negative.

As applications, we obtain conditions in terms of moments for a real-valued function on the real axis to be non-negative, and necessary and sufficient conditions for polynomials in one and several real variables to be non-negative for all real values of their variables. We further obtain conditions in terms of moments for polynomials and some entire functions to have only real zeros.