## 1031-30-23 Steve Zelditch\* (zelditch@math.jhu.edu), Department of Mathematics, Johns Hopkins University, Baltimore, MD 21218. Bergman kernels, Bernstein polynomials and Monge-Ampere. The complex homogeneous Monge-Ampere equation on a kahler manifold arises as the equation for geodesics in the infinite dimensional symmetric space of kahler metrics in a fixed class. Recent work of Phong-Sturm (following suggestions of Donaldson and Arezzo-Tian) shows that the Monge-Ampere geodesics are limits almost everywhere of much simpler 1PS (one-parameter subgroup) geodesics on finite dimensional symmetric spaces of Bergman metrics; they also show that infinite geodesic rays can be associated to 1PS geodesics constructed from 'test configurations'. My talk (joint work with Jian Song) shows that the Bergman 1 PS geodesics are like Bernstein polynomial approximations to the solutions of Monge-Ampere equations. The polynomials converge to the MA solutions at least in C<sup>2</sup> for the endpoint problems on toric varieties. However, the MA geodesics associated to test configurations are only C<sup>11</sup>. (Received July 17, 2007)