Sampling real polynomials

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In this talk, based in joint work with Robert Berman, we discuss the problem sampling multivariate real polynomials oflarge degree in a general framework where the polynomials are definedon an affine real algebraic variety equipped with a weighted measure.We will show that a necessary condition for sampling, is that the asymptotic density of the sampling points is greater than the density of the correspondingweighted equilibrium measure, as defined in pluripotential theory.This result thus generalizes the well-known Landau type results forsampling in the Paley-Wiener space, where the corresponding critical densitycorresponds to the Nyqvist rate, as well as the classical resultsaying that the zeros of orthogonal polynomials becomeequidistributed with respect to the logarithmic equilibrium measure,as the degree tends to infinity.