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Sampling and interpolation problems in several dimensions.

There is a fundamental difference between sampling and interpolation of functions of one and several variables: in dimension $n = 1$ the zeros of an entire function f are discrete, and there is a precise connection between the asymptotic behavior/density of the zeros and the growth of f . It is no longer true in several dimensions. As a consequence, much is known about the interpolation and sampling of bandlimited functions in one dimension, but only a few results are known in higher dimensions. We give a short introduction into the subject and present new sharp sufficient conditions for interpolation and sampling for functions of n variables with convex spectrum.