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Furstenberg's intersection conjecture and the L^q norm of convolutions

I will describe some of the steps involved in the recent solution of Furstenberg's 1969 conjecture on the dimensions of the intersections of sets invariant under multiplication by 2 and by 3 on the circle (a completely different solution was independently obtained by Meng Wu). In particular, I will focus on an inverse theorem for the flattening of the L^q norm of discrete measures under convolution, which is one of the key tools and may have other applications.