1041-60-116 Yuliy Baryshnikov (ymb@research.bell-labs.com), Room MH 2C-361, Bell Laboratories, 600 Mountain Ave, Murray Hill, NJ 07974, and Robin Pemantle* (pemantle@math.upenn.edu), Dept. of Math, 209 South 33rd Street, Philadelphia, PA 19104. Can you "hear" the normal cone of your generating function?

Perhaps you have seen some recent shape theorems for exactly solvable models: the arctic circle theorem for random domino tilings; the "octic" circle theorem for so-called fortress tilings; the Salvador Dali wristwatch limit shapes for quantum random walks. In some sense, these are all the same result. Asymptotic probabilities and regions of non-exponential decay in these models are governed by the normal cone to the generating function and its amoeba. This is joint work with Yuliy Baryshnikov. (Received August 06, 2008)