

Random normed spaces: From Gluskin spaces to saturation phenomenon

Stanislaw Szarek

July 27, 2007

Random normed spaces, or random convex bodies, often exhibit extremal, surprising properties. We briefly review constructions of such spaces starting with the seminal (over 25 years old) paper of Gluskin and culminating in a description of the recently discovered "saturation phenomenon" (based on the speaker's joint work with N. Tomczak-Jaegermann). The principal tools in these constructions are properties of large random matrices and the concentration of Gaussian measure, and particularly the large deviation aspect of the latter.