ICM 1998, Berlin, Aug. 18–27

Abstracts of Plenary and Invited Lectures

Section:

8. Analysis

1991 MS Classification: 46 , 52 , 60
Milman, V. D., Tel Aviv University, Israel
Randomness and Pattern in Convex Geometric Analysis

We will analyze the reasoning behind certain counterintuitive geometric phenomena that occur in high-dimensional normed spaces as well as in high-dimensional convexity theory. A perceived random nature of high dimensional spaces is at the root of the reasons I will discuss in the talk, and the patterns it produces create the unusual phenomena we observe. In reverse, when we discover similar patterns in arbitrary, and apparently very diverse, convex bodies or normed spaces of high dimension, we interpret them as a manifestation of the randomness principle mentioned above. We demonstrate this interplay with a series of recent results, essentially obtained in the last two years. A significant part of these results was done in two series of works, one mainly in collaboration with G. Schechtman and the other in collaboration with A. A. Giannopoulos.