



КОЛЛОКВИУМ ЛАБОРАТОРИИ ЧЕБЫШЕВА

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Joseph Oesterle

(Université Pierre et Marie Curie-Université Paris Diderot)



**“Maximal density of sphere packings in dimension 8 and 24
(after M. Viazovska et al.)”**

The maximal density of sphere packings in a Euclidean space was until recently known only in dimension 1, 2 and 3. A young Ukrainian mathematician, Maryna Viazovska, determined it in 2016 in dimension 8 and soon later, in collaboration with other mathematicians, in dimension 24. This maximal density is achieved when the packing is associated to a lattice of type E_8 in dimension 8, to a Leech lattice in dimension 24. In both cases, these are (up to homothety and isometry) the only periodical sphere packings with maximal density. The proof relies on a criterion of optimality stated in 2003 by H. Cohn and N. Elkies, and involves Laplace transforms of modular and quasi-modular forms.

Приглашаются все желающие!