

series of lectures

RANDOM MATRIX THEORY AND FREE PROBABILITY

Who is speaking? Piotr Śniady, psniady@impan.pl

What is free probability theory? *Free probability* is a very non-commutative probability theory which turns out to describe asymptotic behavior of random matrices and asymptotic behavior of representations of groups. It was conceived with the hope it would solve the *free group factors isomorphism problem* and it is strongly linked to the theory of operator algebras.

What is this series of lectures about? The audience of the first lecture will be questioned about the preferences of the topic. The general plan is to look on the books of Nica & Speicher and Mingo & Speicher for cool and entertaining topics, preferably related to asymptotics of random matrices, matrix integrals, Weingarten calculus, combinatorics of non-crossing partitions.

For whom is this series of lectures? This series of lectures is intended for PhD students with no previous knowledge of the topic. However, if you happen to have a PhD, habilitation, professorship, etc. you are still very welcome to join us.

When? (Mostly) every second ~~Thursday~~ Wednesday, 12.15–15.45, with a lunch break 13.45–14.15. Please allow small possible delay due to late train arrival. The exact schedule is available on the website of the series.

Website. More details are available on the website

<http://psniady.impan.pl/>

→ IMPAN lectures 2017



REFERENCES

- [1] James A. Mingo and Roland Speicher. *Free probability and random matrices*, volume 35 of *Fields Institute Monographs*. Springer, New York; Fields Institute for Research in Mathematical Sciences, Toronto, ON, 2017.
- [2] Alexandru Nica and Roland Speicher. *Lectures on the combinatorics of free probability*, volume 335 of *London Mathematical Society Lecture Note Series*. Cambridge University Press, Cambridge, 2006.