



## Mathematics and CS Seminar

# On the operator norm of tensors matrices involving Haar unitaries

**Benoit Collins**

Kyoto University

Host: Laszlo Erdős

I will introduce the problem of studying the operator norm of random matrices built from polynomial operations involving multiple iid Haar unitary random matrices or random permutation matrices. I will explain its relevance in free probability and other areas, known results, known limitations in the context of random tensors, and recent results in the case of tensors. Time allowing, I will describe the techniques involved (operator-valued non-backtracking theory). This is in part joint work with Charles Bordenave, and in particular, based on the recent preprint [arXiv/2304.05714](https://arxiv.org/abs/2304.05714)

**Thursday, April 27, 2023 04:15pm - 05:15pm**

Heinzel Seminar Room (I21.EG.101), Office Building West, ISTA



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.

Please find a schedule of the ISTA Shuttle on our webpage:

<https://ista.ac.at/en/campus/how-to-get-here/> The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.