

# Spectral measures associated with tensor categories

*Friday, October 28, 2022 10:15 AM (1 hour)*

I will report on an ongoing project with Arthur Forey and Emmanuel Kowalski that grew out of some afterthoughts on our work on equidistribution of exponential sums. We define spectral measures associated with complex-valued additive invariants on tensor categories, and find simple criteria for their existence and uniqueness. We then compute them for some exotic tensor categories, such as Deligne's category of representations of the "symmetric group"  $S_t$  for a complex number  $t$ , and show how they give rise to abstract proofs of very classical results, for example the fact that the random variables giving the number of fixed points of a uniformly chosen random permutation on  $n$  letters converge to the Poisson distribution with parameter 1 as  $n$  goes to infinity.

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**Session Classification:** Friday morning