

1154-46-547

**David A Jekel\*** ([davidjekel@math.ucla.edu](mailto:davidjekel@math.ucla.edu)). *Pinsker Algebras for 1-bounded Entropy*

*II. Preliminary report.*

I will discuss joint work with Hayes, Nelson, and Sinclair, in which we use free entropy techniques to prove maximal amenability for certain subalgebras of  $\text{II}_1$  factors. Continuing from Ben Hayes' talk, I will present some tools and details of our proof. A key idea is that if a random matrix models have exponential concentration and are supported on a "subexponentially large" microstate space, then most of the mass is actually localized to a small ball. A convenient way to map from one microstate space to another (e.g. for different generators) is provided by a new functional calculus, introduced in my own work, that can express an arbitrary element of a (Connes-embeddable) tracial von Neumann algebra  $M = W^*(X_1, \dots, X_n)$  as  $f(X_1, \dots, X_n)$ , where  $f$  is a function that is defined and  $L^2$ -uniformly continuous on all self-adjoint tuples from  $\mathcal{R}^\omega$ . (Received September 06, 2019)