
SERBAN BELINSCHI, University of Saskatchewan, 106 Wiggins Road, Saskatoon, SK
Analytic aspects of free probability of type B

Not long after the publication of Voiculescu's fundamental work which established the field of free probability, it was observed by Speicher that there exists a purely combinatorial description of free independence, based on the lattice of non-crossing partitions of type A. The notions of type B non-commutative probability spaces and free independence of type B originate in a paper of Biane, Goodman and Nica from 2003. Very roughly speaking, these notions are obtained by using Reiner's lattice of non-crossing partitions of type B in the role played by its type A analogue in Speicher's work. This makes possible to define naturally random variables and free convolutions of type B. In this talk we will give an analytic description of these operations, specify appropriate distribution spaces which are stable under these operations and we will show that type B freeness corresponds to a certain "infinitesimal" type A free independence.

The results are part of joint work with E. Maurel-Segala and D. Shlyakhtenko.