

Relations between noncommutative convolutions

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I will introduce a family of independence relations which generalize free and Boolean independence in operator valued probability. The independence relations are defined via rooted trees and their associated additive convolutions are called T -free convolutions. We will see that T -free convolutions form an operad and admit a decomposition property that all T -convolutions are combinations of Boolean and orthogonal additive convolutions. Then, I will briefly review the operator valued power convolutions for free and Boolean independence. With the help of the T -free decomposition theorem, I will show how to use the matricial functions to prove relations between operator-valued power convolutions and T -free convolutions.

Joint work with David Jekel.

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