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Title: Classification of two-faced independences

Abstract:

Two-faced independences are independence relations for pairs of noncommutative random variables, such as bifree independence, which models the relation between left and right regular representation of the free group in the canonical tracial state. Around 2000, in works of Speicher, Ben Ghorbal & Schürmann, and Muraki, a complete classification of "single-faced" independences was obtained: the only independences in this case are boolean, tensor, free, monotone and anti-monotone independence. I report on the current status of the classification program for two (or multi-faced) independences. Based on joint work with Takahiro Hasebe & Michaël Ulrich (arXiv:2111.07649) and Philipp Varšo (arxiv:2301.01816).