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Title: A noncommutative extended de Finetti theorem

Abstract: The extended de Finetti theorem characterizes exchangeable infinite random sequences as conditionally i.i.d. and shows that the apparently weaker distributional symmetry of spreadability is equivalent to exchangeability. Our main result is the noncommutative version of this theorem. We introduce exchangeability and spreadability of infinite noncommutative random sequences. In contrast to the classical result of Ryll-Nadzewski, exchangeability turns out to be stronger for infinite noncommutative random sequences. Out of our investigations emerges noncommutative conditional independence in terms of a von Neumann algebraic structure closely related to Popa's notion of commuting squares.