

1135-47-1995

Ian Charlesworth and **Ken Dykema***, Department of Mathematics, Texas A&M University, College Station, TX 77845, and **Fedor Sukochev** and **Dmitriy Zanin**. *Joint spectral distributions in finite von Neumann algebras.*

We find joint spectral distribution measures for families of commuting elements of a finite von Neumann algebra. These generalize the Brown measure for single operators. In the case of a finite tuple of operators, the support of this joint spectral distribution measure is a subset of the Taylor joint spectrum of the tuple. Furthermore, we find a lattice (based on Borel sets) consisting of hyperinvariant projections that decompose the spectral distribution measure. This leads to simultaneous upper triangularization results for commuting operators. Both of these constructions behave well with respect to multivariate holomorphic functional calculus. (Received September 25, 2017)