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Conformal covariance and the split property

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Abstract

In algebraic quantum field theory models are described through a set of axioms introduced by Haag and Kastler in 1964. Further additional assumptions can be required for mathematical and physical reasons.

Several important structural properties are known to be automatic in the conformal case. The split property is the statistical independence of local algebras associated to regions with a positive (spacelike) separation. We show that in chiral theories when the full conformal (i.e. diffeomorphism) covariance is assumed, then the Split property holds.

Time permitting, we also provide an example of two-dimensional conformal net which does not have the split property.

The talk is based on "Conformal covariance and the split property" joint work with with Y. Tanimoto (Uni. of Rome "Tor Vergata") and M. Weiner (Budapest Uni. of Technology and Economics), arXiv:1609.02196.