DEFORMATIONS OF CHARGED FIELDS WITH ANYONIC STATISTICS

Matthias Plaschke

Department of Mathematics, University of Vienna

A No-Go theorem by J. Mund states that there cannot be free fields with anyonic statistics on three-dimensional Minkowski space. This result can be circumvented by considering only fields which are localized in wedge shaped regions. Such fields can be conveniently constructed by using the method of multiplicative deformations of free fields, recently developed by G. Lechner. Generalizing these deformations to charged free fields it is possible to use a slightly more general class of deformation functions, which can be employed to construct fields localized in wedges and satisfying generalized commutation relations. Similar results can be obtained in two-dimensions, where the anyonic statistics can be equivalently realized by changing the representation of the reflections on every charged sector.