

Contribution Title: ON SUPERSELECTION THEORY OF QUANTUM  
FIELDS IN LOW DIMENSIONS  
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The main results of superselection theory in local quantum field theory initiated by Doplicher, Haag and Roberts in at least two spatial dimensions are: 1. The category of localized representations is equivalent to the representation category of a compact group  $G$ . 2. The net  $A$  of observables embeds into a field net  $F$ , whose localized representation category is trivial. 3. All other local extensions of  $A$  are fixpoint nets of  $F$  under the action of a closed subgroup  $H$  of  $G$ . (Obviously, all this is best interpreted as a Galois theory of local fields.) We review some recent developments concerning the question what replaces the above statements in low dimensions, in particular concerning the study of local extensions and the classification of the possible representation categories.