

Contribution Title:	SYMMETRY BREAKING AND SPLIT PROPERTY IN QUANTUM SPIN CHAIN
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Space-Time locality in quantum lattice models is quite different from that of relativistic quantum field theory as there is no constraint of the speed of light. Nevertheless, we have some results on lattice models analogous to those of local QFT. For example, Fredenhagen's cluster theorem claims that presence of the mass gap implies exponential decay of correlation and the theorem is valid for both local QFT satisfying standard axioms and quantum lattice models. In this talk, we explain the split property of states (weak statistical independence of two subsystems) implies non-trivial results on quantum spin chains. For example, split property automatically implies certain symmetry breaking for spin $1/2$ quantum spin chains. Haag duality plays an important role in our analysis. A part of results in this talk is joint work with M. Keyl, D. Schlingemann, R. Werner.