

Contribution Title:	EXACT RESULTS FOR SUPERSYMMETRIC LATTICE MODELS
Authors:	L. Huijse, K. Schoutens
Presenting author:	Schoutens K.
Affiliation:	University of Amsterdam
E-mail:	C.J.M.Schoutens@uva.nl
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We review recent results, obtained with P. Fendley and L. Huijse, on frustration of quantum charges in lattice models for itinerant fermions with strong repulsive interactions. A judicious tuning of kinetic and interaction terms leads to models possessing supersymmetry. In such models frustration takes the form of what we call superfrustration: an extensive degeneracy of supersymmetric ground states. The quantum ground states are in 1-to-1 correspondence with homology cycles of the independence complex of the underlying lattice. We demonstrate how for the 2D square lattice the ground state counting problem is fully solved through a remarkable correspondence with specific rhombus tilings of the plane.