

Contribution Title:	ENTANGLEMENT IN QUANTUM SPIN SYSTEMS
Authors:	F. Verstraete
Presenting author:	Verstraete F.
Affiliation:	University of Vienna
E-mail:	fverstraete@gmail.com
Invited speaker:	Topical session
YRS seminar:	NO

The field of quantum information theory has recently led to a renewed interest into the field of quantum spin systems. This is due to the fact that strongly correlated quantum spin systems exhibit large amounts of entanglement, the main resource for doing quantum computation. We will review how the entanglement in those systems can be quantified using area laws, and how entanglement theory yields new insights into the structure of the associated low-energy wavefunctions. We will also discuss connections with computational complexity and the renormalization group.