
ALEXI MORIN-DUCHESNE, Université de Montréal
Periodic loop models and extended XXZ Hamiltonians

Non hermitian Hamiltonians play an important role in the description of two dimensional statistical models such as the Fortuin-Kasteleyn model and the Q -Potts spin model. The loop Hamiltonians, as elements of the periodic Temperley-Lieb algebra $TLP_N(\beta)$, are examples of such Hamiltonians: their eigenvalues are real and they are not diagonalizable for specific values of the parameter β .

Loop Hamiltonians are known to be related to XXZ Hamiltonians and a great deal can be learned from this correspondence. In my talk, I will introduce the “twist” representations of the periodic Temperley-Lieb algebra and show how one can study the Jordan structure of the loop Hamiltonian in these representations, using tools from the XXZ models.