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*Higher spin 6-Vertex model and Macdonald polynomials*

It is known that the 6-Vertex model is a quantum integrable model, therefore we know, at least in theory, everything about it. For example, in the case of Domain Wall Boundary Conditions, the partition function is a relatively simple determinant (Izergin, 1987) and it is related to a Schur polynomial.

In a more recent work, Caradoc, Foda and Kitanine (2006) tell us how to generalize this result for higher spins. Based in their work, one can prove that the new partition function is related to a Macdonald polynomial (dF and Balogh, to appear).

In this talk, I will describe the 6-vertex model, explain how to create the higher spin model from the original model. And finally, I will sketch how one can prove that this is indeed a Macdonald polynomial.