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A Vertex Model for LLT Polynomials

In the talk we will describe a novel Yang-Baxter integrable vertex model. From this vertex model we will construct a certain class of partition functions that we will show are equal to the LLT polynomials of Lascoux, Leclerc, and Thibon. Using the vertex model formalism, we give alternate proofs of many properties of these polynomials, including symmetry and a Cauchy identity. This is based on joint work with Sylvie Corteel, Andrew Gitlin, and Jeremy Meza.