Mathematics > Quantum Algebra

Solutions of the Yang-Baxter equation: descendants of the six-vertex model from the Drinfeld doubles of dihedral group algebras

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The representation theory of the Drinfeld doubles of dihedral groups is used to solve the Yang-Baxter equation. Use of the 2-dimensional representations recovers the six-vertex model solution. Solutions in arbitrary dimensions, which are viewed as descendants of the six-vertex model case, are then obtained using tensor product graph methods which were originally formulated for quantum algebras. Connections with the Fateev-Zamolodchikov model are discussed.

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