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Crystals and monodromy of Bethe vectors

The Gaudin algebra acts on invariant vectors in tensor products of representations of semisimple Lie algebras; its eigenvectors are called Bethe vectors. The Gaudin algebra depends on a parameter z which lives in the moduli space M_n of genus 0 curves. We study the monodromy of these Bethe vectors as z varies inside the real locus $M_n(\mathbb{R})$. We show that their monodromy is given by the action of the cactus group on the corresponding tensor product of crystals.