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Cactus group and Yong tableaux

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Let $\mathfrak{g}$ be a classical Lie algebra. There is a family of commutative subalgebras in $U\mathfrak{g}$ over the Deligne-Mumford moduli space $M_{0,n+1}$ with the following properties:

- over the subset of configurations of n points on A^1 it coincides with the family Gaudin subalgebras,
- over the special points it coincides with Gelfand-Zeitlin subalgebras.

Moreover, over the real locus $M_{0,n+1}(\mathbb{R})$ it acts with simple spectrum in the multiplicity space of the tensor product of any n irreducible finite-dimensional $\mathfrak{g}$ -modules. Thus, for any $n + 1$ dominant integer weights we have a covering of eigenlines over $M_{0,n+1}(\mathbb{R})$. The monodromy action of this covering gives us an action of the cactus group ($=S_n$ -equivariant fundamental group of $M_{0,n+1}(\mathbb{R})$) on the fibers, which are parametrized by various kinds of Young tableaux over the special points. .

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