

# SIDE 14.2



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## Deformations of the van Diejen model

Tuesday 20 Jun 2023 at 11:30 (00h30')

### Content :

The (quantum) van Diejen model is an integrable many-body system defined by a family of mutually commuting analytic difference operators that is known to have hyperoctahedral symmetry in its variables and  $E_8$  Weyl group symmetry in its parameters (under certain constraint).

In this talk, new generalizations of the van Diejen Hamiltonian - and some exact eigenfunctions - are presented. In particular, I present a Chalykh-Feigin-Sergeev-Veselov type deformation of the van Diejen Hamiltonian, which is given by an analytic difference operator with two shift parameters, along with the corresponding weight function and kernel function identities.

If time permits, I will also present how some (formal) eigenfunctions of this deformed van Diejen model are related to elliptic hypergeometric integrals of Selberg type.

**Primary authors :** ATAI, Farrokh (University of Leeds)

**Co-authors :**

**Presenter :** ATAI, Farrokh (University of Leeds)

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