4:10

The Dunkl operator:

$$T(f)(x) = f'(x) + k \frac{f(x) - f(-x)}{x} \qquad \text{on } \mathbb{R}$$

In dimension n: $\quad k \in \mathbb{C}, \quad f: \mathbb{C}^n \to \mathbb{C},$

$$T_i(f) = \frac{\partial f}{\partial x_i} + k \sum_{j \neq i} \frac{f - s_{ij}(f)}{x_i - x_j}$$

Thm $\quad T_i T_j = T_j T_i$

$\sum T_i^2$ is a quantization of the Calogero-Moser Hamiltonian,

$$\sum_i p_i^2 - \sum_{i \neq j} \frac{1}{(x_i - x_j)^2} \qquad \text{on } \mathbb{C}^n/S_n \qquad 4:22$$