

# Weyl and Clifford Algebras

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## 1. Complex Weyl and Clifford Algebras

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# One degree of freedom, bosonic case

## Definition

The complex Weyl algebra in the one degree of freedom case is the algebra  $\text{Weyl}(2, \mathbb{C})$ , generated by the elements  $1, a_B, a_B^\dagger$ , satisfying the canonical commutation relations:

$$[a_B, a_B^\dagger] = 1, [a_B, a_B] = [a_B^\dagger, a_B^\dagger] = 0.$$

$\text{Weyl}(2, \mathbb{C})$  is the algebra one gets by taking arbitrary products and complex linear combinations of the generators.

# One degree of freedom, bosonic case