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Fock-like representations for algebraically interacting paraparticles

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Abstract content

We will present and study an algebra describing a mixed paraparticle model, known in the bibliography as "The Relative Parabose Set algebra (\textsc{Rpbs})". Focusing in the special case of a single parabosonic and a single parafermionic degree of freedom $P_{BF}^{(1,1)}$, we will construct a class of Fock-like representations of this algebra, dependent on a positive parameter p a kind of \emph{generalized parastatistics order}. Mathematical properties of the Fock-like modules will be investigated and properties such as ladder operators, irreducibility (for the carrier spaces) and $(\mathbb{Z}{2} \times \mathbb{Z}{2})$-gradings (for both the carrier spaces and the algebra itself) will be established.

Summary

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