Mathematics > Representation Theory

On a class of tensor product representations for the orthosymplectic superalgebra

Kevin Coulembier

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We introduce the spinor representations for osp(m|2n). These generalize the spinors for so(m) and the symplectic spinors for sp(2n) and correspond to representations of the supergroup with supergroup pair (Spin(m) x Mp (2n),osp(m|2n)). We prove that these spinor spaces are uniquely characterized as the completely pointed osp(m|2n)-modules. Then the tensor product of this representation with irreducible finite dimensional osp(m|2n)-modules is studied. Therefore we derive a criterion for complete reducibility of tensor product representations. We calculate the decomposition into irreducible osp(m|2n)-representations of the tensor product of the super spinor space with an extensive class of such representations and also obtain cases where the tensor product is not completely reducible.

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