

Affine $\text{osp}(1|2)$ and its coset construction

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Conformal field theory is an essential tool of modern mathematical physics with applications to string theory and to the critical behaviour of statistical lattice models. The symmetries of a conformal field theory include all angle-preserving transformations. In two dimensions, these transformations generate the Virasoro algebra, a powerful symmetry that allows one to calculate observable quantities analytically. The construction of one family of conformal field theories from the affine Kac-Moody algebra $\mathfrak{sl}(2)$ were proposed by Kent in 1986 as a means of generalising the coset construction to non-unitary Virasoro minimal models, these are known as the Wess-Zumino-Witten models at admissible levels. This talk aims to illustrate, with the example of the affine Kac-Moody superalgebra $\text{osp}(1|2)$ at admissible levels, how the representation theory of a vertex operator superalgebra can be studied through a coset construction. The method allows us to determine key aspects of the theory, including its module characters, modular transformations and fusion rules.

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