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Superconformal algebras on the boundary of AdS_3

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Abstract: Motivated by recent progress on the correspondence between string theory on nti-de Sitter space and conformal field theory, we provide an explicit construction of an infinite dimensional class of superconformal algebras on the boundary of AdS_3. These space-time algebras are N extended superconformal algebras of the kind obtainable by hamiltonian reduction of affine SL$(2|N/2)$ current superalgebras for N even, and are induced by the same current superalgebras residing on the world sheet. Thus, such an extended superconformal algebra is generated by N supercurrents and an SL$(N/2)$ current algebra in addition to a U(1) current algebra. The results are obtained within the framework of free field realizations.

Keywords: Superconformal field theory, AdS/CFT correspondence, string theory, free field realization.

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