

CHIRAL DE RHAM COMPLEX STRUCTURE FOR WITT ALGEBRAS

André Eduardo Zaidan

IME - USP, Brazil

andrezaidan@gmail.com

The Chiral de Rham complex in the case of a torus \mathbb{T}^N , is a tensor product of two vertex super algebras: $V_{Hyp}^+ \otimes V_{\mathbb{Z}^N}$, one is the hyperbolic lattice vertex algebra and the other is the euclidean lattice vertex algebra. The space $M_{Hyp}(\gamma) \otimes V_{\mathbb{Z}^N}^k$ has a structure of a module for the Witt algebra, , where $M_{Hyp}(\gamma)$ is a module for the hyperbolic lattice vertex algebra and $V_{\mathbb{Z}^N}^k$ is the subspace of fermionic degree k . These modules exhaust all exceptional generalized highest weight modules for this Lie algebra.