3rd National Congress on Physical Sciences, 29 Sep. – 2 Oct. 2016, Sofia
Section: Mathematical Physics

W4 Toda CFT Example and Some Applications

P. Furlan[1], **V.B. Petkova**[2]

Dipartimento di Fisica dell'Università di Trieste, Italy
[2]Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences, Sofia, Bulgaria

Abstract. There are few explicit results for the basic structures of the 2d conformal field theories (CFT) based on higher rank algebras. We construct some new examples of 3- and 4-point correlators for the W4 Toda CFT and use them to compute a class of braiding/fusing matrices. Possible applications of these results to the 4d models with superconformal symmetry $sl(2,2|4)$ in the context of the AdS5/CFT4 correspondence are discussed in the heavy and light charge classical limits. The 4-point Toda correlator admits an explicit integral representation which reveals a surprising relation to a correlator in the Liouville CFT with different central charge.