

Abstract

Motivated by realizing open/closed string duality in the work by Gopakumar [hep-th/0308184], we study two and three-point correlation functions of R-current vector fields in $\mathcal{N} = 4$ super Yang-Mills theory. These correlation functions in free field limit can be derived from the worldline formalism and written as heat kernel integrals in the position space. We show that reparametrizing these integrals convert them to the expected *AdS* supergravity results which are known in terms of bulk to boundary propagator. We expect that this reparametrization corresponds to transforming open string moduli parameterization to the closed string ones.