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Summary: In the presence of antisymmetric Kalb-Ramond field $B_{\mu\nu}$ Dp-brane, to which string endpoints are attached, is a noncommutative manifold. Adding linear dilaton field, $\Phi(x) = \Phi_0 + a_\mu x^\mu$, the coordinate in the direction of dilaton gradient, $x_c = a_\mu x^\mu$, becomes commutative, while the world-sheet conformal factor F is a new noncommutative variable. In this article we demonstrate different approach to realization of quantum conformal invariance. We introduce Liouville action in such a way that world-sheet conformal factor F does not spoil quantum conformal invariance and theory depends on arbitrary parameter, central charge c. Particular relations between background fields produce local gauge symmetries, which transform some of the Neumann into the Dirichlet boundary conditions decreasing the dimensionality of Dp-brane.

We introduce one methodological improvement regarding derivation of boundary conditions. Canonical Hamiltonian as a time translation generator must have well defined derivatives in coordinates and momenta. From this requirement we obtain boundary conditions directly in terms of canonical variables.

MSC:

83E30 String and superstring theories in gravitational theory
83C65 Methods of noncommutative geometry in general relativity

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