論文内容の要旨

論文題目

Vertex Operators in Supersymmetric Matrix Models

(超対称行列模型における頂点作用素)

氏名　齋藤　理

The IIB matrix model was proposed as a nonperturbative formulation of superstring theory, which is a viable candidate for quantum theory of gravity. This thesis deals with vertex operators in this model. Vertex operators represent the emission and absorption process and are expected to be useful in the evaluation of scattering amplitudes. We construct the vertex operators corresponding to the IIB supergravity multiplet, which survive in low energy limit. To this end, we use the supersymmetric Wilson loop operator. The expressions for vertex operators corresponding to gravitino and antisymmetric tensor field are the new results. On the other hand, we also investigate the six-dimensional counterpart of the IIB matrix model. This model is suggested by the existence of six-dimensional supersymmetric Yang-Mills theory. We conjecture that our model describes the Little String Theory. We derive the vertex operators corresponding to (2,0) tensor multiplet.