

Relation between covariant and light-cone superstring field theory

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In perturbative string theory, there have mainly been two ways to quantize the string. Either one quantizes in lightcone gauge, or one quantizes covariantly. The difference between them is only gauge condition, and the equivalence of on-shell amplitudes had been already shown. String field theory is a candidate for a non-perturbative formulation of string theory. There have mainly been two formulations, they are covariant string field theory (covariant SFT) and light-cone string field theory (light-cone bosonic SFT) In bosonic string field theory, it is shown that the light-cone bosonic SFT is an effective SFT which is obtained by integrating out some degrees of freedom from a covariant bosonic SFT by Erler-Matsunaga. We show that the light-cone super SFT is an effective SFT for a covariant super SFT. This talk is based on the collaboration with R.Fujii, H.Kunitomo and J.Yoshinaka.

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