

International Conference on String Field Theory and String Perturbation Theory



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A worldline approach to theories with infinite many fields in flat spacetime

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The talk tries to address the question: how to construct a local field theory with infinite many fields. First the effective action method is presented. It is shown how it naturally leads to the definition of (generally non-local) field theories. It has however strong technical limitations. Then the more powerful and systematic worldline approach is introduced, which carries the L-infinity symmetry and relevant Ward identities. The latter can be integrated, leading to a set of new theories: YM-like theories in any dimension and CS-like theories in any odd dimension. The structure the YM-like theories, in particular the absence of propagating ghosts, is discussed. Finally a possible connection with string theory is suggested.

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Session Classification: Talks