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Spin Fields as Point-like Defects on the Worldsheet

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We show a new method to compute the correlator of an arbitrary number of (excited) spin fields based on a time dependent defect CFT procedure, with the possibility to extend it to (excited) twist fields, both in the Abelian and non Abelian cases.

We consider two-dimensional fermions in the presence of point-like defects in the time-like direction corresponding to spin fields which provide non trivial boundary conditions. We solve them and the equations of motion to define a basis of modes in the Euclidean formulation. We compute the algebra of creation and annihilation operators necessary to build the Fock space in the presence of defects. With the definition of the in-vacuum, we then compute the contractions of the fields and the stress-energy tensor which shows that we are indeed considering a CFT, notwithstanding the time dependent defects. We then proceed to build the Hermitian conjugate vacuum in order to compute the correlators of the spin fields.

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