

## On a $\partial, \bar{\partial}$ system with a large parameter.

*Thursday, September 5, 2019 9:45 AM (45 minutes)*

This is part of a joint work with Christian Klein and Nikola Stoilov. We consider a  $2 \times 2$  system of  $\partial, \bar{\partial}$  type in the large parameter limit, appearing in the study of the Davey-Stewartson II equation.

When a certain potential is smooth, we show that the solution is given by a convergent perturbation series.

When it is the characteristic function of a strictly convex domain, we analyze the leading term in the series. Numerical simulations show a fairly good coincidence with the full solution despite the lack of smoothness of the potential in this case.

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