# Titles & Abstracts

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Title: Solutions of the tt*-equations constructed from the $(\mathrm{SU}_2)_k$-fusion ring, and Smyth potentials

**Abstract**

Cecotti and Vafa introduced the tt* equations(topological-antitopological fusion equations), whose solutions describe massive deformations of supersymmetric conformal field theories. As a special case, the tt* equations include the sinh-Gordon equation, and more generally the tt*-Toda equations which were studied by Guest, Its and Lin. In this talk, we consider another series of examples. We construct a solution directly from a finite number of solutions to the radial sinh-Gordon equation. It involves the $(\mathrm{SU}_2)_k$-fusion algebra, an object which has a prominent role in conformal field theory. The idea of the construction is due to Cecotti and Vafa. We give a precise mathematical formulation and a description of the "holomorphic data" corresponding to the solutions by using the DPW method.