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Topological-antitopological fusion and the quantum cohomology of Grassmannians

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Abstract. We suggest an explanation for the part of the Satake Correspondence which relates the quantum cohomology of complex Grassmannians and the quantum cohomology of complex projective space, as well as their respective Stokes data, based on the original physics approach using the tt* equations. We also use the Stokes data of the tt* equations to provide a Lie-theoretic link between particles in affine Toda models and solitons in certain sigma-models. Along the way, we review some old ideas from supersymmetric field theory, whose mathematical manifestations are becoming increasingly widespread.

Keywords and phrases: tt* equations, quantum cohomology, Satake correspondence

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