



Contribution ID: 17

Type: Oral Presentation

## The Simplest Gauge-String Duality

Tuesday, 30 June 2015 11:30 (20 minutes)

**Abstract content &nbsp; (Max 300 words)<br><a href="http://events.saip.org.za/getFile.py/?target=\_blank">Formatting &<br>Special chars</a>**

We consider an instructive toy model of the gauge-string dualities which exist between quantum field theory and theories of quantum gravity. In this example we study the Gaussian matrix model as our gauge theory and the topological A-model string theory on  $P^1$  as our theory of quantum gravity. We propose operators in the matrix model that are dual to the gravitational descendants of the puncture operators of the topological string theory. We test our proposal by showing that matrix model correlators obtained from the recursion relations that follows from a systematic  $1/N$  expansion of well chosen Schwinger-Dyson equations are in complete agreement with correlators in the dual topological string theory, up to contact terms.

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yes

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MSc

**Main supervisor (name and email) and his / her institution**

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**Would you like to submit a short paper for the Conference Proceedings (Yes / No)?**

no

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yes

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**Session Classification:** TCP

**Track Classification:** Track G - Theoretical and Computational Physics