



Department of  
Theoretical Physics

# THE QUANTUM SPACETIME SEMINAR SERIES

## Exact WKB analysis of $\Omega$ -deformed Seiberg-Witten Theory.

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**Date:** April 4, 2016  
**Time:** 11.30 am  
**Venue:** A-304, TIFR



(Duration and Location are subject to irreducible jitter)

We study  $N=2$  Seiberg-Witten theory coupled to  $0 \leq N_f \leq 4$  flavours. Using the 4D-2D relation we derive the differential equations satisfied by  $\varepsilon_1$  and  $\varepsilon_2$  deformed instanton partition functions in each of these cases. In the semi-classical limit we show that these differential equations take a form amenable to exact WKB analysis. We compute the monodromy group associated to the respective differential equations in terms of  $\varepsilon_1$  deformed and Borel resummed Seiberg-Witten data. For each case we study pairs of Stokes graphs that are related by flips and pops, and show that the monodromy group allows one to derive the Stokes automorphisms that arise as the phase of  $\varepsilon_1$  is varied.