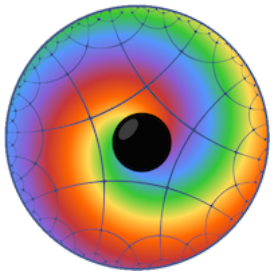

Contribution ID: **33** Type: **not specified**

A Monotonicity Theorem for Two-dimensional Boundaries and Defects

Thursday, 16 April 2015 17:40 (30 minutes)

I will propose a proof for a monotonicity theorem, or c-theorem, for a three-dimensional Conformal Field Theory (CFT) on a space with a boundary, and for a two-dimensional defect coupled to a higher-dimensional CFT. The proof is applicable only to renormalization group flows that are localized at the boundary or defect, such that the bulk theory remains conformal along the flow, and that preserve locality, unitarity, and Euclidean invariance along the defect. The method of proof is a generalization of Komargodski's proof of Zamolodchikov's c-theorem. The key ingredient is an external "dilaton"field introduced to match Weyl anomalies between the ultra-violet (UV) and infra-red (IR) fixed points. Unitarity of the dilaton's effective action guarantees that a certain coefficient in the boundary/defect Weyl anomaly must take a value in the UV that is larger than (or equal to) the value in the IR.

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Session Classification: Afternoon session