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## Mati – Critical scaling in the large- $N$ $O(N)$ model in higher dimensions and its possible connection to quantum gravity

*Wednesday 24 February 2016 19:00 (20 minutes)*

The critical scaling of the large- $N$   $O(N)$  model in higher dimensions using the exact renormalization group equations has been studied, motivated by the recently found non-trivial fixed point in  $4 < d < 6$  dimensions with metastable critical potential. Particular attention is paid to the case of  $d=5$  where the scaling exponent of the correlation length has the value  $1/3$ , which coincides with the scaling exponent of quantum gravity in one fewer dimensions. Convincing results show that this relation could be generalized to arbitrary number of dimensions above five. Some aspects of AdS/CFT correspondence are also discussed.

**Presenter:** Dr MATI, Peter (ELI-ALPS)

**Session Classification:** Contributed talks