APCTP SEMINAR

RG flows and fixed points of O(N)^r theories

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The O(N) model may just be the single most studied of all quantum field theories. The model enjoys this status in part due to its experimental relevance, and in part because its solvability at large N makes it a useful toy model. But the model also requires just about the maximal amount of global symmetry possible for a theory of N scalars. During this talk I will explain how, by advancing from a theory of vector fields to one of tensor fields, one discovers a vast set of generalizations of this model, which greatly break the symmetry from one large O(N) group into several smaller O(N) groups, but nonetheless retain large N solvability. Based on 2311.09039 with Yaron Oz.