CONSTRUCTING A MASSLESS QUANTUM FIELD THEORY OVER THE P-ADICS

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Abstract: In a 2003 paper Brydges, Mitter, and Scopolla studied a ϕ^4 perturbation of a massless Gaussian scalar field over $\mathbb{R}^3$, they proved the existence of a Renormalization Group fixed point in a space of effective potentials and constructed its local stable manifold. I will describe further results on a simplified hierarchical version of this model, in particular the construction and invariances of a measure without cut-offs corresponding to this RG fixed point.

This is joint work with Abdelmalek Abdesselam and Gianluca Guadagni.