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# Renormalization on the fuzzy sphere

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We study renormalization on the fuzzy sphere. We perform Monte Carlo simulation of a scalar field theory on the fuzzy sphere, which is described by a Hermitian matrix model. We show that correlation functions defined by using the Berezin symbol are made independent of the matrix size, which plays a role of a UV cutoff, by tuning a parameter of the theory. We also find that the theories on the phase boundary are universal. They behave as a conformal field theory at short distances, while they show an effect of the UV/IR mixing at long distances.

**Primary author:** Mr HATAKEYAMA, Kohta (Shizuoka University)

**Co-authors:** Prof. TSUCHIYA, Asato (Shizuoka University); Mr YAMASHIRO, Kazushi (Shizuoka University)

**Presenter:** Mr HATAKEYAMA, Kohta (Shizuoka University)

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