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Kaluza-Klein theory with fuzzy sphere fibre

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In the Kaluza-Klein theory with fuzzy sphere fiber, I will show how SU(2) Yang-Mills field and a real-symmetric-matrix valued Liouville-sigma model field arise from the dimensional reduction of Ricci scalar. Moreover, with this noncommutative fiber, we can derive the cylinder ansatz in usual KK theory.

Additionally, the KK tower of scalar and spinor field will obtain the natural truncation without using any approximation. Especially, for 0-radius fuzzy sphere, a massless singlet spinor will become a massive doublet spinor. This could provide new insights into Standard Model.

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