

# Kaluza-Klein theory with ultrametric compact dimensions

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## 1 Action

$$S = \int_{R^{3,1}} dx^4 \int_{\mathbb{Z}_p} dy \quad \frac{1}{2} \phi (\partial^2 + D_y^s) \phi + V(\phi) \quad (1)$$

## 2 Consistent Truncation