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Gauge and Higgs boson masses from an extra dimension

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We present novel calculations of the mass hierarchy of the $SU(2)$ pure gauge theory on a space-time lattice with an orbifolded fifth dimension. This theory has three parameters; the gauge coupling β , the anisotropy γ , which is a measure of the ratio of the lattice spacing in the four dimensions to that in the fifth dimension, and the extent of the extra dimension N_5 . Using a large basis of scalar and vector operators we explore in detail the spectrum along the $\gamma = 1$ line, and for the first time we investigate the dependence of the spectrum on N_5 and γ .

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