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# KMI-Theory Seminar

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## "Light scalar spectrum in extra-dimensional gauge theories"

**Enrico RINALDI (KMI)**

**Wednesday, June 6, 2012 · 17:00-18:00**

**KMI Science Symposia(ES-635)**

### **Abstract:**

The phase diagram of five-dimensional  $SU(2)$  gauge theories with one compactified dimension on anisotropic lattices has a rich structure. In this talk I will show how to control non-perturbatively the scale hierarchy between the cutoff and the compactification scale in the bare parameter space. There exists a set of strong bare couplings where the five-dimensional lattice theory can be described by an effective four-dimensional theory with a scalar field in the adjoint representation. I will present a detailed study of the light scalar spectrum as it arises from the non-perturbative dynamics of the full lattice theory. Cutoff effects and finite-size effects are studied and the results are favourably compared to perturbative results.