

# Elena and Miguel aTOPE (28-7-09)

## RS warped extra dimensions

L. Randall, R. Sundrum, A Large Mass Hierarchy from a Small Extra Dimension. Physical Review Letters 83 (1999): 3370–3373

L. Randall, Warped Passages: Unraveling the Mysteries of the Universe's Hidden Dimensions. New York: HarperCollins (2005).

**When SM gauge penetrate the bulk, Kaluza Klein towers of excited states appear. The KK gluon has some quite attractive features for experimentalists.**

**couples strongly to quarks:**

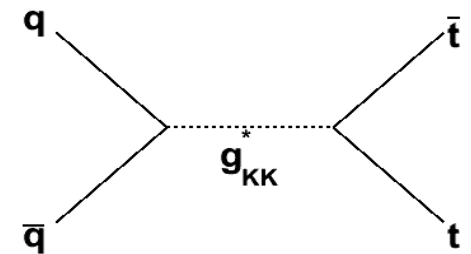
large cross-section: 15 pb for  $m(g_{KK}^*) = 1 \text{ TeV} @ 10 \text{ TeV}$

**but, by the same token:**

not a narrow resonance! Basic RS model:  $\Gamma = 0.17 M$

**Large branching fraction into  $t\bar{t}$**

Basic RS scenario: 92.6 %



## @ IFIC: Z' Reconstruction on Athena 14.5.2

**Sample: 105139 kk-gluon semileptonic 2TeV (10k events)**

