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The Higgs (125 GeV) in a warped theory of flavor: Physics case for a Gigantic International Hadron Collider.

Last year LHC experiments made a monumental discovery: a SM-like Higgs particle of mass ~ 125 GeV. This watershed discovery challenges us to reconsider some of our widely held beliefs, in particular regarding the notion of hierarchy/naturalness. However, we emphasize that whereas those notions are not tangible, existence of flavors is an experimental fact. Randall-Sundrum ideas provide an extremely interesting geometric understanding of flavors; that construction also simultaneously addresses hierarchy to a very large degree. Flavor constraints in simplest realization of such warped space ideas suggest that the RS scale is unlikely to be below ~ 10 TeV. Such a scale then has the immediate consequence that the properties of the Higgs in the context of RS will be very difficult to discern from the SM. Resulting experimental signatures for the experiments at the intensity frontier as well as for colliders will be reviewed. For direct experimental tests of RS though it is likely that we may well need a new hadron collider with cm energy of ~ 100 TeV; a genuine international effort for such a machine is called for.

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