

Large scale separation from mass-split BSM models

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Beyond Standard Model theories describing the electro-weak sector with a 125 GeV Higgs boson but with so far no other observed resonances must be consistent with large scale separation or “walking”. Large separation of scales arises naturally and in a tunable manner in mass-split models that are built on a conformal fixed point in the ultraviolet. When the fermion masses are split, with some kept light (or massless) and others are heavy, the system exhibits conformal behavior in the ultraviolet but is chirally broken in the infrared.

Primary author: Prof. HASENFRATZ, Anna (University of Colorado)

Co-author: WITZEL, Oliver (University of Colorado Boulder)

Presenter: Prof. HASENFRATZ, Anna (University of Colorado)

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