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Supersymmetric multi-Higgs doublet model with non-linear electroweak symmetry breaking

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The electroweak symmetry is nonlinearly realized in an extension of the minimal supersymmetric standard model (MSSM) through an additional pair of constrained Higgs doublet superfields. The superpotential couplings of this constrained Higgs doublet pair to the MSSM Higgs doublet pair catalyze their vacuum expectation values. The Higgs and Higgsino-gaugino mass spectrum is presented for several choices of supersymmetry (SUSY) breaking and Higgs superpotential mass parameters. The additional vacuum expectation values provided by the constrained fields can produce a phenomenology quite different than that of the MSSM.

Presenter: TER VELDHUIS, Tonnis (Macalester College)

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