Contribution ID: **216** Type: **Talk**

Next-to-leading order unitarity fits of the Two-Higgs-Doublet Models

Thursday, July 7, 2016 5:50 PM (20 minutes)

We present global fits of the Two-Higgs-Doublet models with a softly broken Z_2 symmetry. The results were obtained with the public HEPfit package and combine the effects of various constraints coming from experiment (including LHC run I) and theory. As for the latter, we use for the first time the next-to-leading order contributions to the scattering matrix of "two scalar to two scalar" processes in a global Two-Higgs-Doublet model fit. We will discuss in detail how unitarity and perturbativity affect the model parameters.

Primary author: CHOWDHURY, Debtosh (INFN, Rome)

Co-authors: MURPHY, Christopher W. (Scuola Normale Superiore, Pisa); SILVESTRINI, Luca (INFN Rome); EBERHARDT, Otto (Istituto Nazionale di Fisica Nucleare); CACCHIO, Vincenzo (INFN, Rome)

Presenter: CHOWDHURY, Debtosh (INFN, Rome)

Session Classification: Higgs Physics

Track Classification: Higgs Physics