

EFT for Higgs Physics

Thursday, 31 May 2018 15:00 (20 minutes)

The ATLAS and CMS collaborations have recently released significant new data on Higgs and diboson production in LHC Run 2. Measurements of Higgs properties have improved in many channels, while kinematic information for $h \rightarrow \gamma\gamma$ and $h \rightarrow ZZ$ can now be more accurately incorporated in fits using the STXS method, and W^+W^- diboson production at high p_T gives new sensitivity to deviations from the Standard Model. We have performed an updated global fit to precision electroweak data, W^+W^- measurements at LEP, and Higgs and diboson data from Runs 1 and 2 of the LHC in the framework of the Standard Model Effective Field Theory (SMEFT), allowing all coefficients to vary across the combined dataset, and present the results in both the Warsaw and SILH operator bases. We exhibit the improvement in the constraints on operator coefficients provided by the LHC Run 2 data, and discuss the correlations between them. We also explore the constraints our fit results impose on several models of physics beyond the Standard Model.

E-mail

cmurphy@bnl.gov

Primary author: MURPHY, Chris (Brookhaven)

Presenter: MURPHY, Chris (Brookhaven)

Session Classification: Physics at High Energies

Track Classification: PHE