

Very boosted Higgs in gluon fusion

Wednesday 28 May 2014 15:10 (20 minutes)

The Higgs production and decay rates offer a new way to probe new physics beyond the Standard Model. While dynamics aiming at alleviating the hierarchy problem generically predict deviations in the Higgs rates, the current experimental analyses cannot resolve the long- and short-distance contributions to the gluon fusion process and thus cannot access directly the coupling between the Higgs and the top quark. We investigate the production of a boosted Higgs in association with a high-transverse momentum jet as an alternative to the $t\bar{t}h$ channel to pin down this crucial coupling. Presented first in the context of an effective field theory, our analysis is then applied to models of partial compositeness at the TeV scale and of natural supersymmetry.

Primary authors: WEILER, Andreas (CERN); GROJEAN, Christophe (ICREA - Institutio catalana de recerca estudis avancats (ES)); SALVIONI, Ennio (University of California Davis (US)); SCHLAFFER, Matthias Josef (Deutsches Elektronen-Synchrotron (DE))

Presenter: SCHLAFFER, Matthias Josef (Deutsches Elektronen-Synchrotron (DE))

Session Classification: Higgs

Track Classification: Higgs Physics