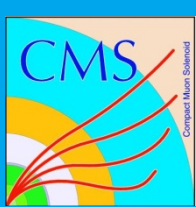


Higgs cross talk

- MSSM $H \rightarrow \tau\tau$
 - analysis of the 2016 data is completed. Results of the analysis are pre-approved. Approval will take place within the next few weeks.
- NMSSM $H(125) \rightarrow aa$
 - finalizing analysis in the 4-tau channel (2016 data)
 - started analysis in the (mumu)($\tau\tau$) (2016 data)
 - both analyses target Winter 18 Conferences
 - dedicated trigger for these analysis has been developed and deployed for the 2017 data taking
- SM $H \rightarrow \tau\tau$
 - started looking at 2017 data
 - monitoring tau triggers
 - calibrating MET
 - measuring lepton Id efficiencies
 - plans : contribute to CP Higgs measurements with 2017 data



Higgs cross talk (cont'd)

- Tau ID performance with 2016 data
 - PAS (TAU-16-003) has been preapproved
 - The contributions from the DESY group are:
 - tau ID efficiency measurements with $Z \rightarrow \tau\tau$ and $W^* \rightarrow \tau + \nu$ events
 - jet $\rightarrow$ tau fake rate measurements with $W \rightarrow \mu + \nu + 1\text{jet}$ events
 - $e \rightarrow \tau$ and muon $\rightarrow$ tau fake rates with $Z \rightarrow \mu\mu$ and $Z \rightarrow ee$ events.
- $H \rightarrow bb$
 - MSSM/2HDM analysis with 2016 data implementing ARC comments.
 - updated MSSM benchmark scenarios to be released before end of the year (in contact with Georg Weiglein and Stefan Liebler). Will take them into account if they arrive in time for the publication.
 - include new ATLAS $A \rightarrow Zh$ result (improved 2HDM limits, 3.6 sigma excess at 440 GeV)
 - nice bachelor thesis of Jonas Rübenach, defence took place this morning.
 - shows that introduction of 4-btag category is promising.
 - also positive experience with deep CSV btagging.
 - first test of 2017 data. Overall data quality looks OK. Nominal btag WP not yet defined.