

OX/BER/DESY IRTG Meeting

Instrumentation, Methods and Applications

PP Task Force

Çiğdem İşsever

17.03.2020

Video Conference



PP Common Projects btw OX/HU/DESY

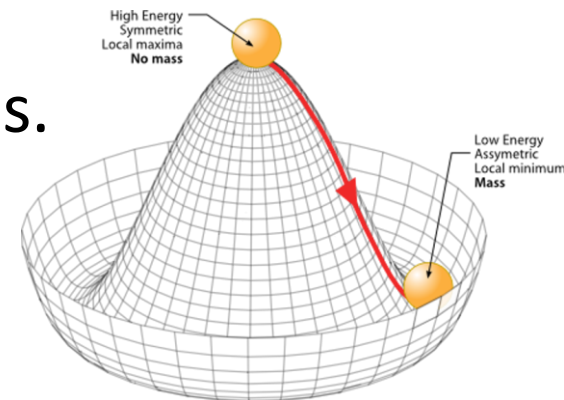
■ Existing Connections →

- Bortoletto (OX), Issever (HU/DESY), Huffman (OX), Frost (OX)
- Joint Student supervision
 - Migle S., Federico C., Beojan S., Santiago P. S.
- Team up on three analyses (So far)
 - $HH \rightarrow 4b$,
 - $X \rightarrow bb + \text{jet}$,
 - Phenomenological study on HH prospects in future colliders

■ Continue into future → Joint interests.

■ Much Oxford PP on ATLAS involves Higgs studies.

- SUSY and SM Higgs in many channels



PP Common Projects btw PP and AP and QT

- Proton-oxygen beam collisions at the LHC for air shower physics
 - Collaboration with CTA
 - atmospheric neutrino flux calculations using cosmic muon flux and charge ratio measurements → IceCube

- Share analysis methods?
 - Statistical analysis
 - Machine Learning

- PP Experiments with quantum sensors

PP Common Training Modules

- German students could participate in PP Graduate Lectures?
- Or the ML Workshops at Oxford? (AP and PP students)
- What courses at HU or DESY would be interesting for Oxford Students?

Action Items for PP Task Force

- 5. Action: Make a list of methods, instrumentation and laboratory facilities in Particle Physics
 - **Not complete**
- 6. Action: Identify possible collaborations/projects (thesis topics) or training modules in PP across Oxford, DESY and HU
 - **Have some ideas, could there be other collaborations outside the context of Higgs?**
- 7. Action: List possible collaborations/projects (thesis topics) or training modules between PP and AP, QO and Detector R&D or Accelerator Science
 - **Have two ideas. More?**
- 8. Action: Identify possible internship topics that could lead to papers → **Not much progress made.**