



Contribution ID: 972

Type: Poster

## **Inclusive search for a boosted Higgs boson and observation of the Z boson decaying to charm quarks with the CMS experiment**

*Friday, 8 July 2022 20:10 (20 minutes)*

A search for standard model Higgs bosons produced with transverse momentum greater than 450 GeV and decaying to charm quark-antiquark pairs is performed using proton-proton collision data collected by the CMS experiment at the LHC at 13 TeV. The search is inclusive in the Higgs boson production mode. Highly Lorentz-boosted Higgs bosons are reconstructed as single large-radius jets and are identified using a dedicated tagging technique based on a Deep Neural Network. The method is validated with Z to charm quark-antiquark pair decays and this process is observed for the first time in the Drell-Yan production mode at a hadron collider.

### **In-person participation**

Yes

**Primary author:** NOVAK, Andrzej

**Presenter:** NOVAK, Andrzej

**Session Classification:** Poster Session

**Track Classification:** Higgs Physics