



Contribution ID: 703

Type: Parallel talk

## New Physics interpretations with GAMBIT

*Thursday 11 July 2019 12:00 (15 minutes)*

I will present recent results from the Global and Modular Beyond-the-Standard-Model Inference Tool (GAMBIT) collaboration. Global fits with GAMBIT have been carried out on many models including supersymmetric models, scalar singlet dark matter, fermionic and vector Higgs portal dark matter and axions. In this talk I will focus on our most recent study interpreting collider constraints on electroweakinos (arXiv:1809.02097). First we show that when the neutralinos and charginos are the only light states of the MSSM, there are scenarios which evade LHC constraints for any mass of the lightest neutralino and the lightest chargino, i.e. the profile likelihood shows no constraint in this plane when one only considers the possibility of excluding new physics. Intriguingly, in addition we also find that excesses in the data can lead to closed contours, indicating a preference for light neutralinos and charginos over the standard model. We find the excess has a local significance of 3.3 sigma when combining ATLAS and CMS 13 TeV searches, which drops to 2.9 sigma when including 8 TeV searches as well

**Authors:** ATHRON, Peter; GAMBIT COLLABORATION

**Presenter:** ATHRON, Peter

**Session Classification:** Searches for New Physics

**Track Classification:** Searches for New Physics