

## **Supersymmetric Parameter Determination at the LHC using a Neural Network**

*Tuesday 21 May 2013 17:20 (15 minutes)*

Finding signs of new physics and even knowing the underlying theory does not automatically come along with the knowledge of the model parameters. In most new physics theories the relation mapping the measured observables onto the model parameters is unknown. In this talk the ability of a neural network is demonstrated to find this unknown relation in parameter space. As example different reference regions of the mSUGRA parameter space are examined in the context of the LHC with a center of mass energy of 14 TeV. But in general a neural network can also be used for any other model. For a given measurement the artificial neural network directly computes the values of the model parameters and their errors.

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**Session Classification:** Parallel Session on LHC