

## **Dark matter, singlet extensions of the nuMSM, and symmetries**

*Thursday, 23 May 2013 16:20 (15 minutes)*

The Lyman-alpha forest bound severely constrains the non-resonant production of warm dark matter in the nuMSM. It has been shown that an extension of the nuMSM by a Higgs singlet  $\phi$  can provide a dark matter production mechanism through the decays of  $\phi$  that readily satisfies or escapes the Lyman-alpha bound. I will discuss the astrophysical and cosmological constraints on such models and demonstrate how the required pattern of masses and couplings can be realized with underlying symmetries.

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**Session Classification:** Parallel Session on LHC and DM