

Abstract Submitted  
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**New Dark Matter Candidate in a  $U(1)'$  Model** SALAH NASRI, HYE-SUNG LEE, KANSTANTIN MATCHEV, University of Florida — The Minimal Supersymmetric Standard Model (MSSM) suffers from the fine-tuning of the  $\mu$  parameter in the superpotential. This is called the “ $\mu$  problem” in the MSSM. The  $U(1)'$ -extended MSSM (UMSSM) is a natural extension without the  $\mu$ -problem or domain wall problem. With a new gauge boson ( $Z'$ ), we revive the possibility for the sneutrino to be the dark matter including the constraints on the relic density from WMAP, bounds on  $Z'$  mass from Tevatron and BBN and the constraint on the elastic scattering cross section off nucleon from CDMSII.

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