Title:	Indirect searches of the degenerate MSSM
Authors:	Patel, K.M. (/jspui/browse?type=author&value=Patel%2C+K.M.)
Keywords:	degenerate sfermionic gaugino-Higgsino MSUSY
Issue Date:	2017
Publisher:	American Physical Society
Citation:	Physical Review D, 95(7)
Abstract:	A degenerate sfermionic particle spectrum can escape constraints from flavor physics, and at the same time evade the limits from the direct searches if the degeneracy extends to the gaugino-Higgsino sector. Inspired by this, we consider a scenario where all the soft terms have an approximately common mass scale at MSUSY, with splittings $\lesssim O(10\%)$. As a result, the third generation sfermions have large to maximal (left-right) mixing, the same being the case with charginos and some sectors of the neutralino mass matrix. We study this scenario in the light of discovery of the Higgs boson with mass ~ 125 GeV. We consider constraints from B physics, the anomalous magnetic moment of the muon and the dark matter relic density. We find that a supersymmetric spectrum as light as 600 GeV could be consistent with all current data and also account for the observed anomalous magnetic moment of the muon within 2σ. The neutralino relic density is generally too small to saturate the measured cold dark matter relic density. Direct detection limits from XENON100 and LUX put severe constraints on this scenario which will be conclusively probed by the XENONnT experiment.
Description:	Only IISERM authors are available in the record.
URI:	https://journals.aps.org/prd/abstract/10.1103/PhysRevD.95.075025 (https://journals.aps.org/prd/abstract/10.1103/PhysRevD.95.075025) http://hdl.handle.net/123456789/2621 (http://hdl.handle.net/123456789/2621)
Appears in Collections:	Research Articles (/jspui/handle/123456789/9)

Files in This Item:

File	Description	Size	Format	
Need to add pdf.odt (/jspui/bitstream/123456789/2621/1/Need%20to%20add%20pdf.odt)		8.63 kB	OpenDocument Text	View/Open (/jspui/bitstream/12345

Show full item record (/jspui/handle/123456789/2621?mode=full)
(/jspui/handle/123456789/2621/statistics)