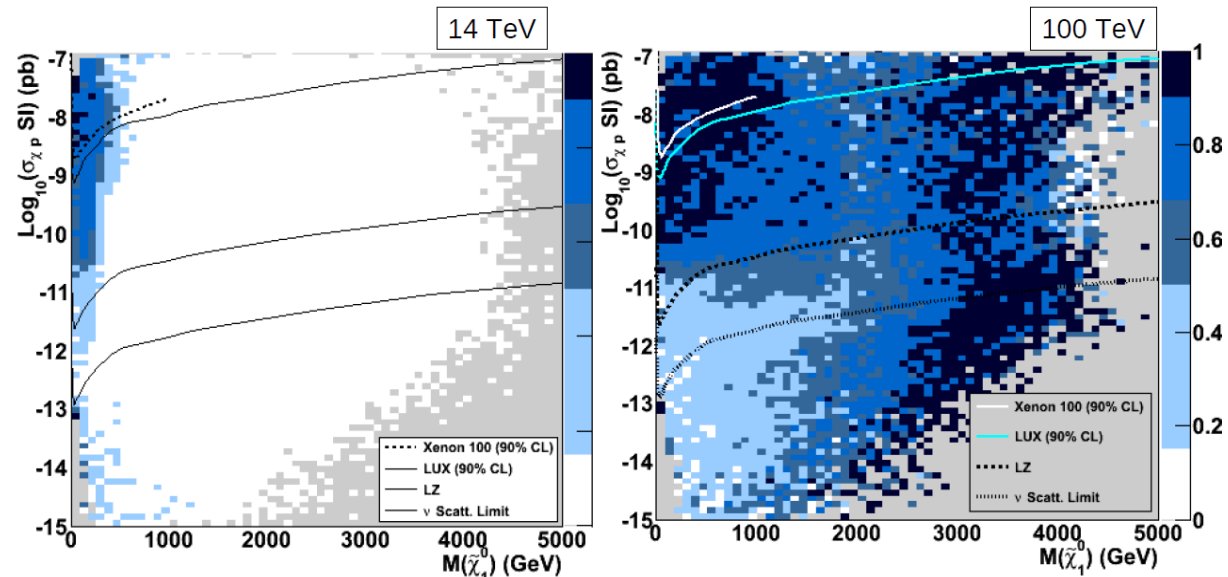


Exploring the pMSSM at 100 TeV

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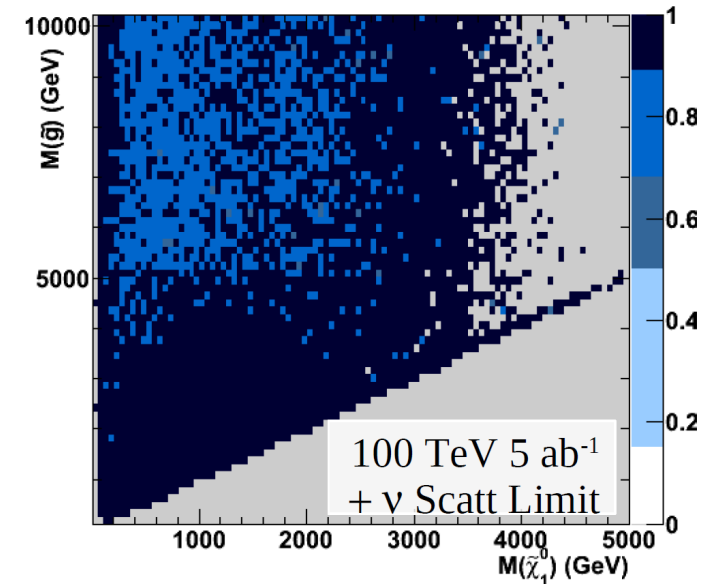
- Full scan of the pMSSM 19 parameter space with SUSY masses up to 25 TeV
- Using the projected constraints of HL-LHC and determination of scenarios where signals could be observed
- Aim: assess whether data at a O(100 TeV) pp collider will enable to either discover a signal, or combined with DM data falsify the (p)MSSM
- Highlight the complementarity of LHC searches, DM direct detection and flavour physics
- FCC potential will be complemented by that of next generation direct DM experiments bringing the sensitivity to the neutrino scattering limit

Fraction of points excluded by monojet and SUSY searches



Summary of fractions of excluded pMSSM points:

	Jets+MET+EWK + Mono J/W/Z	+ LUX	+ LZ	preliminary + 3 rd gen. DM exp
14 TeV 3 ab ⁻¹	0.09	0.19	0.50	0.76
100 TeV 1 ab ⁻¹	0.63	0.65	0.73	0.90
100 TeV 3 ab ⁻¹	0.67	0.69	0.75	0.91
100 TeV 5 ab ⁻¹	0.69	0.72	0.76	0.92



- Starting from the strategy of the 7+8 TeV LHC analyses
→ modify the signal regions by studying the evolution of the S/B
- This study will also clarify how crucial various detector performances will be at 100 TeV in these scenarios (forward region, jet substructure, b-tagging, ...)
- Preliminary results reported at the FCC Spring meeting and the SLAC 100 TeV workshop
→ we aim at first round of results in Summer 2015