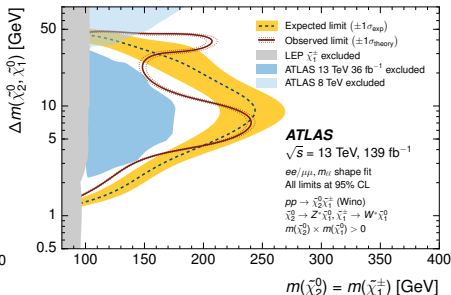
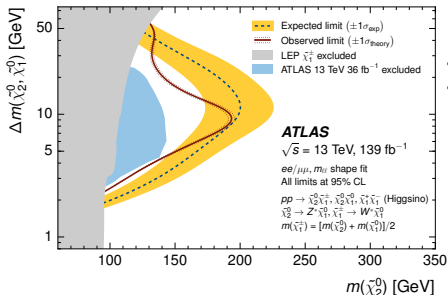


We've been working for several years on soft-lepton searches for compressed SUSY in ATLAS:

- $36 \text{ fb}^{-1}$ : [ATLAS-SUSY-2016-25](#)
- $139 \text{ fb}^{-1}$ : [ATLAS-SUSY-2018-16](#)



- These were the starting point for the ATLAS soft-2L projections for HL-LHC

Plans for Snowmass: revisit a few projections for 14 and 100 TeV

- Soft-2L searches
  - Can easily generate signal MC, but backgrounds for high-lumi projections are tricky, especially  $W$ +jets to model fake leptons. Will likely need help Snowmass MC team to generate a full suite of backgrounds
  - Interested in opportunities to collaborate on this or similar projects with common background MC needs.
- VBF-0L searches:
  - [CMS demonstrated](#) VBF to be very strong at small splittings using 13 TeV data, would like to extend similar searches to 100 TeV.
  - Working on signal and background MC for this now.

Person-power: fractions of myself, a postdoc, possibly a graduate student; several interested undergraduates.