SUSY Listings

Michael Barnett
Physics Division
Lawrence Berkeley National Laboratory

A very long section

The PDF file of Listings has 110 pages

Encoders are:

- **Monica D'Onofrio (ATLAS)**
- **Filip Moortgat (CMS)**

Overseer is:

- **Herbi Dreiner (theory)**

Many Simplified models

49 models listed at beginning of section

In the listings we have made use of the following abbreviations for simplified models employed by the experimental collaborations in supersymmetry searches published in the past year.

Simplified Models Table

Tglu1A: gluino pair production with $\tilde{g} \to q\bar{q}\tilde{\chi}_1^0$.

Tglu1B: gluino pair production with $\tilde{g} \to qq'\tilde{\chi}_1^\pm$, $\tilde{\chi}_1^\pm \to W^\pm\tilde{\chi}_1^0$.

Tglu1C: gluino pair production with a 2/3 probability of having a $\tilde{g} \to qq'\tilde{\chi}_1^\pm$, $\tilde{\chi}_1^\pm \to W^\pm\tilde{\chi}_1^0$ decay and a 1/3 probability of having a $\tilde{g} \to qq\tilde{\chi}_2^0$, $\tilde{\chi}_2^0 \to Z^\pm\tilde{\chi}_1^0$ decay.

Tglu1D: gluino pair production with one gluino decaying to $qq'\tilde{\chi}_1^\pm$ with $\tilde{\chi}_1^\pm \to W^\pm + \tilde{G}$, and the other gluino decaying to $q\bar{q}\tilde{\chi}_1^0$ with $\tilde{\chi}_1^0 \to \gamma + \tilde{G}$.

Tglu1E: gluino pair production with $\tilde{g} \to qq'\tilde{\chi}_1^\pm$, $\tilde{\chi}_1^\pm \to W^\pm\tilde{\chi}_2^0$ and $\tilde{\chi}_2^0 \to Z^\pm\tilde{\chi}_1^0$ where $m_{\tilde{\chi}_1^\pm} = (m_{\tilde{g}} + m_{\tilde{\chi}_1^0})/2$, $m_{\tilde{\chi}_2^0} = (m_{\tilde{\chi}_1^\pm} + m_{\tilde{\chi}_1^0})/2$.

Tglu1F: gluino pair production with $\tilde{g} \to qq'\tilde{\chi}_1^\pm$ or $\tilde{g} \to qq\tilde{\chi}_2^0$ with equal branching ratios, where $\tilde{\chi}_1^\pm$ decays through an intermediate scalar tau lepton or sneutrino to $\tau\nu\tilde{\chi}_1^0$ and where $\tilde{\chi}_2^0$ decays through an intermediate scalar tau lepton or sneutrino to $\tau^+\tau^-\tilde{\chi}_1^0$ or $\nu\bar{\nu}\tilde{\chi}_1^0$; the mass hierarchy is such that $m_{\tilde{\chi}_1^\pm} \sim m_{\tilde{\chi}_2^0} = (m_{\tilde{g}} + m_{\chi_1^0})/2$ and $m_{\tilde{\tau},\tilde{\nu}} = (m_{\tilde{\chi}_1^\pm} + m_{\tilde{\chi}_1^0})/2$.

Tglu1G: gluino pair production with $\tilde{g} \to q\bar{q}\tilde{\chi}_2^0$, and $\tilde{\chi}_2^0$ decaying through an intermediate slepton or sneutrino to $l^+l^-\tilde{\chi}_1^0$ or $\nu\bar{\nu}\tilde{\chi}_1^0$ where $m_{\tilde{\chi}_2^0} = (m_{\tilde{g}} + m_{\tilde{\chi}_1^0})/2$ and $m_{\tilde{l},\tilde{\nu}} = (m_{\tilde{\chi}_2^0} + m_{\tilde{\chi}_1^0})/2$.

Tglu1H: gluino pair production with $\tilde{g} \to q\bar{q}\tilde{\chi}_2^0$, and $\tilde{\chi}_2^0 \to \tilde{\chi}_1^0 Z^{0(*)}$.

Tglu2A: gluino pair production with $\tilde{g} \to b\bar{b}\tilde{\chi}_1^0$.

Tglu3A: gluino pair production with $\tilde{g} \to t\bar{t}\tilde{\chi}_1^0$.

Tglu3B: gluino pair production with $\tilde{g} \to t\bar{t}$ where $\tilde{t}$ decays exclusively to $t\tilde{\chi}_1^0$.

Tglu3C: gluino pair production with $\tilde{g} \to t\bar{t}$ where $\tilde{t}$ decays exclusively to $c\tilde{\chi}_1^0$.

Tglu3D: gluino pair production with $\tilde{g} \to tb\tilde{\chi}_1^\pm$ with $\tilde{\chi}_1^\pm \to W^\pm\tilde{\chi}_1^0$.

Tglu3E: gluino pair production where the gluino decays 25% of the time through $\tilde{g} \to t\bar{t}\tilde{\chi}_1^0$, 25% of the time through $\tilde{g} \to b\bar{b}\tilde{\chi}_1^0$ and 50% of the time through $\tilde{g} \to tb\tilde{\chi}_1^\pm$ with $\tilde{\chi}_1^\pm \to W^\pm\tilde{\chi}_1^0$

Tglu4A: gluino pair production with one gluino decaying to $qq'\tilde{\chi}_1^\pm$ with $\tilde{\chi}_1^\pm \to W^\pm + \tilde{G}$, and the other gluino decaying to $q\bar{q}\tilde{\chi}_1^0$ with $\tilde{\chi}_1^0 \to \gamma + \tilde{G}$.

Tglu4B: gluino pair production with gluinos decaying to $q\bar{q}\tilde{\chi}_1^0$ and $\tilde{\chi}_1^0 \to \gamma + \tilde{G}$.

Tglu4C: gluino pair production with gluinos decaying to $\tilde{g} \to q\bar{q}\tilde{\chi}_1^0$ and $\tilde{\chi}_1^0 \to Z + \tilde{G}$.

Tsqk1: squark pair production with $\tilde{q} \to q\tilde{\chi}_1^0$.

Tsqk2: squark pair production with $\tilde{q} \to q\tilde{\chi}_2^0$ and $\tilde{\chi}_2^0 \to Z + \tilde{\chi}_1^0$.

Tsqk3: squark pair production with $\tilde{q} \to q'\tilde{\chi}_1^\pm$, $\tilde{\chi}_1^\pm \to W^\pm\tilde{\chi}_1^0$ (like Tglu1B but for squarks)

Tsqk4: squark pair production with squarks decaying to $q\tilde{\chi}_1^0$ and $\tilde{\chi}_1^0 \to \gamma + \tilde{G}$.

Tsqk4A: squark pair production with one squark decaying to $q\tilde{\chi}_1^\pm$ with $\tilde{\chi}_1^\pm \to W^\pm + \tilde{G}$, and the other squark decaying to $q\tilde{\chi}_1^0$ with $\tilde{\chi}_1^0 \to \gamma + \tilde{G}$.

Tsqk4B: squark pair production with squarks decaying to $q\tilde{\chi}_1^0$ and $\tilde{\chi}_1^0 \to \gamma + \tilde{G}$.

Tstop1: stop pair production with $\tilde{t} \to t\tilde{\chi}_1^0$.

Tstop2: stop pair production with $\tilde{t} \to b\tilde{\chi}_1^\pm$ with $\tilde{\chi}_1^\pm \to W^\pm\tilde{\chi}_1^0$.

Tstop3: stop pair production with the subsequent four-body decay $\tilde{t} \to bff'\tilde{\chi}_1^0$ where f represents a lepton or a quark.

Tstop4: stop pair production with $\tilde{t} \to c\tilde{\chi}_1^0$.

Tstop5: stop pair production with $\tilde{t} \to b\nu\tilde{\tau}$ with $\tilde{\tau} \to \tau\tilde{G}$.

Tstop6: stop pair production with $\tilde{t} \to t + \tilde{\chi}_2^0$, where $\tilde{\chi}_2^0 \to Z + \tilde{\chi}_1^0$ or $H + \tilde{\chi}_1^0$ each with Br=50%.

Tstop7: stop pair production with $\tilde{t}_2 \to \tilde{t}_1 + H/Z$, where $\tilde{t}_1 \to t + \tilde{\chi}_1^0$.

Tstop8: stop pair production with equal probability of the stop decaying via $\tilde{t} \to t\tilde{\chi}_1^0$ or via $\tilde{t} \to b\tilde{\chi}_1^\pm$ with $\tilde{\chi}_1^\pm \to W^\pm\tilde{\chi}_1^0$.

Tstop9: stop pair production with equal probability of the stop decaying via $\tilde{t} \to c\tilde{\chi}_1^0$ or via the four-body decay $\tilde{t} \to bff'\tilde{\chi}_1^0$ where f represents a lepton or a quark.

Tstop10: stop pair production with $\tilde{t} \to b\tilde{\chi}_1^\pm$ and $\tilde{\chi}_1^\pm \to W^{\pm *}\tilde{\chi}_1^0 \to (f\bar{f}') + \tilde{\chi}_1^0$ with a virtual W-boson.

Tstop11: stop pair production with $\tilde{t} \to b\tilde{\chi}_1^\pm$ with $\tilde{\chi}_1^\pm$ decaying through an intermediate slepton to $l\nu\tilde{\chi}_1^0$

Tstop1RPV: stop pair production with $\tilde{t} \to \bar{b}\bar{s}$ via RPV coupling λ''_{323}.

Tsbot1: sbottom pair production with $\tilde{b} \to b\tilde{\chi}_1^0$.

Tsbot2: sbottom pair production with $\tilde{b} \to t\chi_1^-$, $\chi_1^- \to W^-\tilde{\chi}_1^0$.

Tsbot3: sbottom pair production with $\tilde{b} \to b\tilde{\chi}_2^0$, where one of the $\tilde{\chi}_2^0 \to Z^{(*)}\tilde{\chi}_1^0 \to f\bar{f}\tilde{\chi}_1^0$ and the other $\tilde{\chi}_2^0 \to \tilde{\ell}\ell^+ \to \ell^+\ell^-\tilde{\chi}_1^0$.

Tchi1chi1A: electroweak pair and associated production of nearly mass-degenerate charginos $\tilde{\chi}_1^\pm$ and neutralinos $\tilde{\chi}_1^0$, where $\tilde{\chi}_1^\pm$ decays to $\tilde{\chi}_1^0$ plus soft radiation, and where one of the $\tilde{\chi}_1^0$ decays to $\gamma + \tilde{G}$ while the other one decays to $Z/H + \tilde{G}$ (with equal probability).

Tchi1chi1B: electroweak pair production of charginos $\tilde{\chi}_1^\pm$, where $\tilde{\chi}_1^\pm$ decays through an intermediate slepton or sneutrino to $l\nu\tilde{\chi}_1^0$ and where the slepton or sneutrino mass is 5%, 25%, 50%, 75% and 95% of the $\tilde{\chi}_1^\pm$ mass.

Tchi1chi1C: electroweak pair production of charginos $\tilde{\chi}_1^\pm$, where $\tilde{\chi}_1^\pm$ decays through an intermediate slepton or sneutrino to $l\nu\tilde{\chi}_1^0$ and where $m_{\tilde{l},\tilde{\nu}} = (m_{\tilde{\chi}_1^\pm} + m_{\tilde{\chi}_1^0})/2$.

Tchi1n1A: electroweak associated production of mass-degenerate charginos $\tilde{\chi}_1^\pm$ and neutralinos $\tilde{\chi}_1^0$, where $\tilde{\chi}_1^\pm$ decays exclusively to $W^\pm + \tilde{G}$ and $\tilde{\chi}_1^0$ decays exclusively to $\gamma + \tilde{G}$.

Tchi1n2A: electroweak associated production of mass-degenerate charginos $\tilde{\chi}_1^\pm$ and neutralinos $\tilde{\chi}_2^0$, where $\tilde{\chi}_1^\pm$ decays through an intermediate slepton or sneutrino to $l\nu\tilde{\chi}_1^0$ and where $\tilde{\chi}_2^0$ decays through an intermediate slepton or sneutrino to $l^+l^-\tilde{\chi}_1^0$ or $\nu\bar{\nu}\tilde{\chi}_1^0$.

Tchi1n2B: electroweak associated production of mass-degenerate charginos $\tilde{\chi}_1^\pm$ and neutralinos $\tilde{\chi}_2^0$, where $\tilde{\chi}_1^\pm$ decays through an intermediate slepton or sneutrino to $l\nu\tilde{\chi}_1^0$ and where $chiz_2$ decays through an intermediate slepton or sneutrino to $l^+l^-\tilde{\chi}_1^0$ or $\nu\bar{\nu}\tilde{\chi}_1^0$ and where the slepton or sneutrino mass is 5%, 25%, 50%, 75% and 95% of the $\tilde{\chi}_1^\pm$ mass.

Tchi1n2C: electroweak associated production of mass-degenerate charginos $\tilde{\chi}_1^\pm$ and neutralinos $\tilde{\chi}_2^0$, where $\tilde{\chi}_1^\pm$ decays through an intermediate slepton or sneutrino to $l\nu\tilde{\chi}_1^0$ and where $chiz_2$ decays through an intermediate slepton or sneutrino to $l^+l^-\tilde{\chi}_1^0$ or $\nu\bar{\nu}\tilde{\chi}_1^0$ and where $m_{\tilde{l},\tilde{\nu}} = (m_{\tilde{\chi}_1^\pm} + m_{\tilde{\chi}_1^0})/2$.

Tchi1n2D: electroweak associated production of mass-degenerate charginos $\tilde{\chi}_1^\pm$ and neutralinos $\tilde{\chi}_2^0$, where $\tilde{\chi}_1^\pm$ decays through an intermediate scalar tau lepton or sneutrino to $\tau\nu\tilde{\chi}_1^0$ and where $chiz_2$ decays through an intermediate scalar tau lepton or sneutrino to $\tau^+\tau^-\tilde{\chi}_1^0$ or $\nu\bar{\nu}\tilde{\chi}_1^0$ and where $m_{\tilde{\tau},\tilde{\nu}} = (m_{\tilde{\chi}_1^\pm} + m_{\tilde{\chi}_1^0})/2$.

Tchi1n2E: electroweak associated production of mass-degenerate charginos $\tilde{\chi}_1^\pm$ and neutralinos $\tilde{\chi}_2^0$, where $\tilde{\chi}_1^\pm \to W^\pm + \tilde{\chi}_1^0$ and $\tilde{\chi}_2^0 \to H + \tilde{\chi}_1^0$.

Tn2n3A: electroweak associated production of mass-degenerate neutralinos $\tilde{\chi}_2^0$ and $\tilde{\chi}_3^0$, where $\tilde{\chi}_2^0$ and $\tilde{\chi}_3^0$ decay through intermediate sleptons to $l^+l^-\tilde{\chi}_1^0$ and where the slepton mass is 5%, 25%, 50%, 75% and 95% of the $\tilde{\chi}_2^0$ mass.

Tn2n3B: electroweak associated production of mass-degenerate neutralinos $\tilde{\chi}_2^0$ and $\tilde{\chi}_3^0$, where $\tilde{\chi}_2^0$ and $\tilde{\chi}_3^0$ decay through intermediate sleptons to $l^+l^-\tilde{\chi}_1^0$ and where $m_{\tilde{l}} = (m_{\tilde{\chi}_2^0} + m_{\tilde{\chi}_1^0})/2$.

Some improvement

Clearly would be simplified if someone would actually discover supersymmetry (although not at the very beginning).

Some improvement

Each subsection is mixing various models.

In last edition, separated

R-parity-conserving and

R-parity-violating

into different subsections for each particle (where appropriate).

since they are unrelated.

Also, removed enormous amount of "old" data.
In some cases, "old" was defined as 2012.

Choosing best limits is difficult

R-parity conserving $\tilde{q}$ (Squark) mass limit

VALUE (GeV)	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
>1450 (CL = 95%) OUR EVALUATION					CMSSM, $\tan\beta$=30, μ >0
>1550 (CL = 95%) OUR EVALUATION					Mass degenerate squarks
>1050 (CL = 95%) OUR EVALUATION					Single light squark bounds
>1220	95	[1] AABOUD	17AR	ATLS	1ℓ+jets+$\not{E}_T$, Tsqk3, $m_{\tilde{\chi}_1^0} = 0$ GeV
>1000	95	[2] AABOUD	17N	ATLS	2 same-flavour, opposite-sign ℓ + jets + $\not{E}_T$, Tsqk2, $m_{\tilde{\chi}_1^0} = 0$ GeV

Ten pages of Listings for Gluino

Ten pages of data listings before footnotes and

nothing older than 2014

Heavy $\tilde{g}$ (Gluino) mass limit

For $m_{\tilde{g}} > 60$–70 GeV, it is expected that gluinos would undergo a cascade decay via a number of neutralinos and/or charginos rather than undergo a direct decay to photinos as assumed by some papers. Limits obtained when direct decay is assumed are usually higher than limits when cascade decays are included.

Some earlier papers are now obsolete and have been omitted. They were last listed in our PDG 14 edition: K. Olive, *et al.* (Particle Data Group), Chinese Physics **C38** 070001 (2014) (http://pdg.lbl.gov).

VALUE (GeV)	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
>2040	95	[1] SIRUNYAN	18D	CMS	top quark (hadronically decaying) + jets + $\not{E}_T$, Tglu3A, $m_{\tilde{\chi}_1^0} =$ 0 GeV
>1930	95	[1] SIRUNYAN	18D	CMS	top quark (hadronically decaying) + jets + $\not{E}_T$, Tglu3B, $m_{\tilde{t}_1} - m_{\tilde{\chi}_1^0} = 175$ GeV, $m_{\tilde{\chi}_1^0} = 200$ GeV
>1690	95	[1] SIRUNYAN	18D	CMS	top quark (hadronically decaying) + jets + $\not{E}_T$, Tglu3C,

First two pages of footnotes

1 SIRUNYAN 18D searched in 35.9 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events containing identified hadronically decaying top quarks, no leptons, and $\not{E}_T$. No significant excess above the Standard Model expectations is observed. Limits are set on the stop mass in the Tstop1 simplified model, see their Figure 8, and on the gluino mass in the Tglu3A, Tglu3B, Tglu3C and Tglu3E simplified models, see their Figure 9.

2 AABOUD 17AI searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with one or more isolated lepton, at least eight jets, either zero or many b-jets, for evidence of R-parity violating decays of the gluino. No significant excess above the Standard Model expectations is observed. Limits up to 2.1 TeV are set on the gluino mass in R-parity-violating supersymmetry models as Tglu3A with LSP decay through the non-zero λ''_{112} coupling as $\tilde{\chi}^0_1 \rightarrow uds$. See their Figure 9.

3 AABOUD 17AI searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with one or more isolated lepton, at least eight jets, either zero or many b-jets, for evidence of R-parity violating decays of the gluino. No significant excess above the Standard Model expectations is observed. Limits up to 1.65 TeV are set on the gluino mass in R-parity-violating supersymmetry models with $\tilde{g} \rightarrow t\bar{t}$, $\tilde{t} \rightarrow bs$ through the non-zero λ''_{323} coupling. See their Figure 9.

4 AABOUD 17AI searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with one or more isolated lepton, at least eight jets, either zero or many b-jets, for evidence of R-parity violating decays of the gluino. No significant excess above the Standard Model expectations is observed. Limits up to 1.8 TeV are set on the gluino mass in R-parity-violating supersymmetry models as Tglu1A with the LSP decay through the non-zero λ' coupling as $\tilde{\chi}^0_1 \rightarrow qq\ell$. See their Figure 9.

5 AABOUD 17AJ searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with two same-sign or three leptons, jets and large missing transverse momentum. No significant excess above the Standard Model expectations is observed. Limits up to 1.75 TeV are set on the gluino mass in Tglu3A simplified models in case of off-shell top squarks and for $m_{\tilde{\chi}^0_1} = 100$ GeV. See their Figure 4(a).

6 AABOUD 17AJ searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with two same-sign or three leptons, jets and large missing transverse momentum. No significant excess above the Standard Model expectations is observed. Limits up to 1.57 TeV are set on the gluino mass in Tglu1E simplified models (2-step models) for $m_{\tilde{\chi}^0_1} = 100$ GeV. See their Figure 4(b).

7 AABOUD 17AJ searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with two same-sign or three leptons, jets and large missing transverse momentum. No significant excess above the Standard Model expectations is observed. Limits up to 1.86 TeV are set on the gluino mass in Tglu1G simplified models for $m_{\tilde{\chi}^0_1} = 200$ GeV. See their Figure 4(c).

8 AABOUD 17AJ searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with two same-sign or three leptons, jets and large missing transverse momentum. No significant excess above the Standard Model expectations is observed. Limits up to 1.8 TeV are set on the gluino mass in R-parity-violating supersymmetry models as Tglu3A with LSP decaying through the non-zero λ''_{112} coupling as $\tilde{\chi}^0_1 \rightarrow uds$. See their Figure 5(d).

9 AABOUD 17AJ searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with two same-sign or three leptons, jets and large missing transverse momentum. No significant excess above the Standard Model expectations is observed. Limits up to 1.75 TeV are set on the gluino mass in R-parity-violating supersymmetry models as Tglu1A with LSP decaying through the non-zero λ' coupling as $\tilde{\chi}^0_1 \rightarrow qq\ell$. See their Figure 5(c).

10 AABOUD 17AJ searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with two same-sign or three leptons, jets and large missing transverse momentum. No significant excess above the Standard Model expectations is observed. Limits up to 1.45 TeV are set on the gluino mass in R-parity-violating supersymmetry models where $\tilde{g} \rightarrow t\tilde{t}_1$ and $\tilde{t}_1 \rightarrow sd$ through the non-zero λ''_{321} coupling. See their Figure 5(b).

11 AABOUD 17AJ searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with two same-sign or three leptons, jets and large missing transverse momentum. No significant excess above the Standard Model expectations is observed. Limits up to 1.45 TeV are set on the gluino mass in R-parity-violating supersymmetry models where $\tilde{g} \rightarrow t\tilde{t}_1$ and $\tilde{t}_1 \rightarrow bd$ through the non-zero λ''_{313} coupling. See their Figure 5(a).

12 AABOUD 17AJ searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with two same-sign or three leptons, jets and large missing transverse momentum. No significant excess above the Standard Model expectations is observed. Limits up to 400 GeV are set on the down type squark ($\tilde{d}_R$ mass in R-parity-violating supersymmetry models where $\tilde{d}_R \rightarrow tb$ through the non-zero λ''_{313} coupling or $\tilde{d}_R \rightarrow ts$ through the non-zero λ''_{321}. See their Figure 5(e) and 5(f).

13 AABOUD 17AR searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with one isolated lepton, at least two jets and large missing transverse momentum. No significant excess above the Standard Model expectations is observed. Limits up to 2.1 TeV are set on the gluino mass in Tglu1B simplified models, with $x = (m_{\tilde{\chi}^\pm_1} - m_{\tilde{\chi}^0_1}) / (m_{\tilde{g}} - m_{\tilde{\chi}^0_1}) = 1/2$.Similar limits are obtained for variable x and fixed neutralino mass, $m_{\tilde{\chi}^0_1} = 60$ GeV. See their Figure 13.

14 AABOUD 17AR searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with one isolated lepton, at least two jets and large missing transverse momentum. No significant excess above the Standard Model expectations is observed. Limits up to 1.74 TeV are set on the gluino mass in Tglu1E simplified model. Limits up to 1.7 TeV are also set on pMSSM models leading to similar signal event topologies. See their Figure 13.

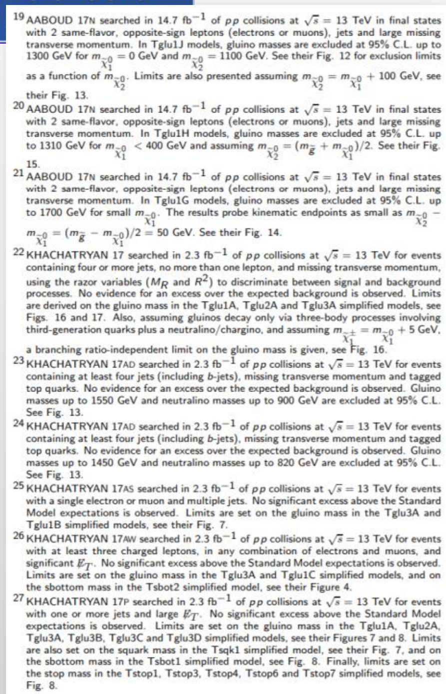
15 AABOUD 17AY searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with at least four jets and large missing transverse momentum. No significant excess above the Standard Model expectations is observed. Limits up to 1.8 TeV are set on the gluino mass in Tglu3A simplified models assuming $m_{\tilde{t}_1} - m_{\tilde{\chi}^0_1} = 5$ GeV. See their Figure 13.

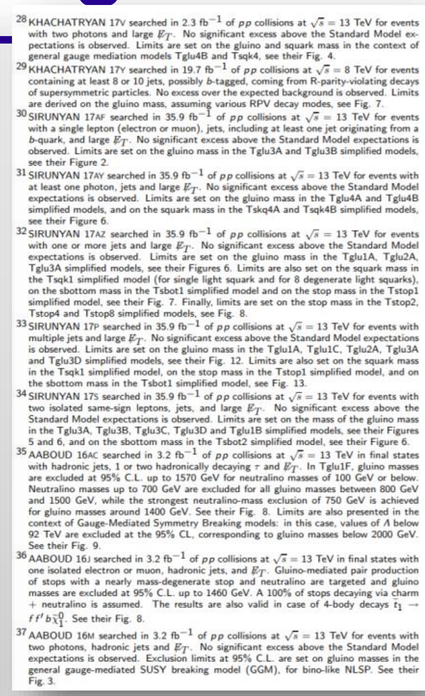
16 AABOUD 17AZ searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with at least seven jets and large missing transverse momentum. Selected events are further classified based on the presence of large R-jets or b-jets and no leptons. No significant excess above the Standard Model expectations is observed. Limits up to 1.8 TeV are set on the gluino mass in Tglu1E simplified models. See their Figure 6b.

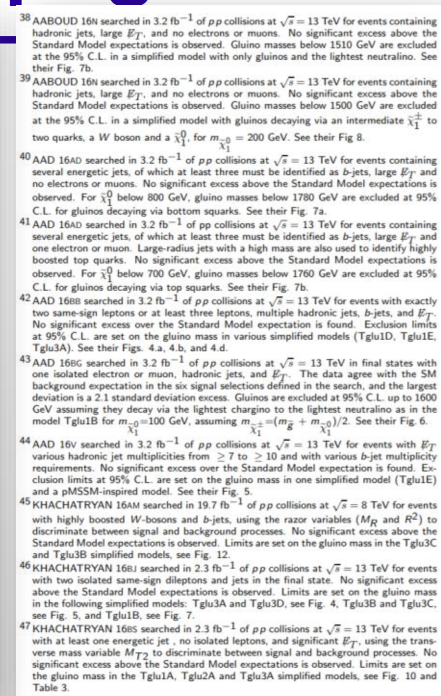
17 AABOUD 17AZ searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with at least seven jets and large missing transverse momentum. Selected events are further classified based on the presence of large R-jets or b-jets and no leptons. No significant excess above the Standard Model expectations is observed. Limits up to 1.54 TeV are set on the gluino mass in Tglu3A simplified models. See their Figure 7a.

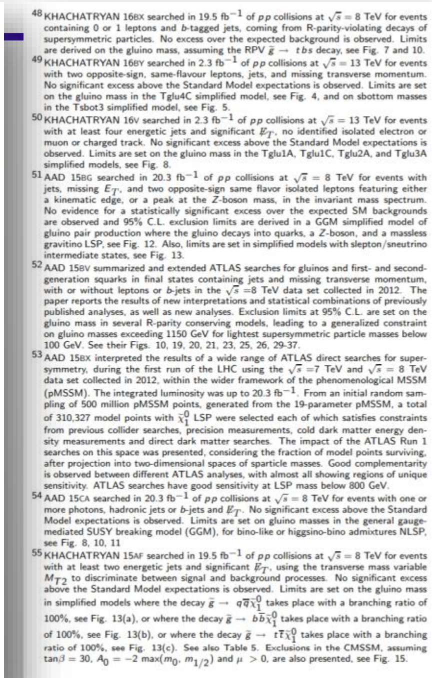
18 AABOUD 17AZ searched in 36.1 fb^{-1} of pp collisions at $\sqrt{s} = 13$ TeV for events with at least seven jets and large missing transverse momentum. Selected events are further classified based on the presence of large R-jets or b-jets and no leptons. No significant excess above the Standard Model expectations is observed. Limits are set for R-parity violating decays of the gluino assuming $\tilde{g} \rightarrow t\tilde{t}_1$ and $\tilde{t}_1 \rightarrow bs$ through the non-zero λ''_{323} couplings. The range 625–1375 GeV is excluded for $m_{\tilde{t}_1} = 400$ GeV. See their Figure 7b.

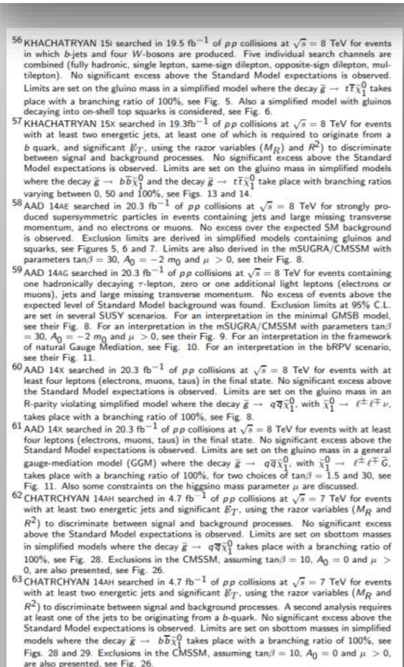
...and eight more pages of footnotes

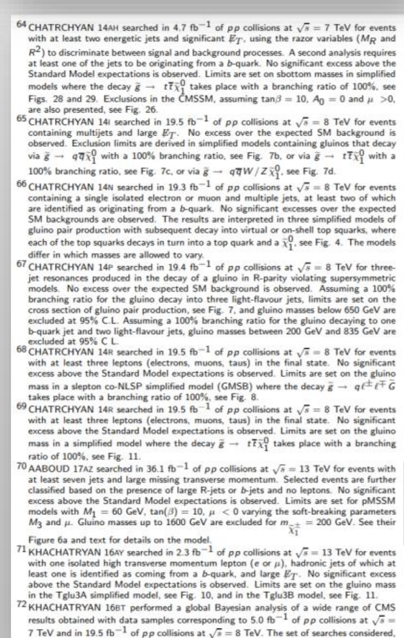


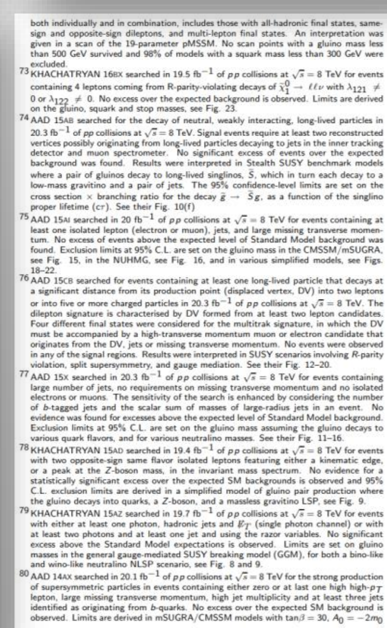


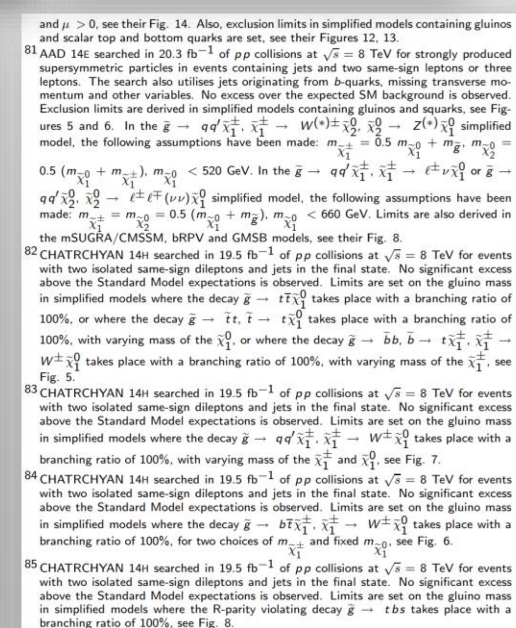












Conclusions

The encoders, overseer, and I have had lots of discussions about improved handling of supersymmetry listings. Including list of simplified models at front, and radical removing "older" papers.

Also discussed at a workshop here.

They have also met separately from me.

But the complexities are major.

We will continue to seek ways to make the supersymmetry listings more useable.

Discovery would help.