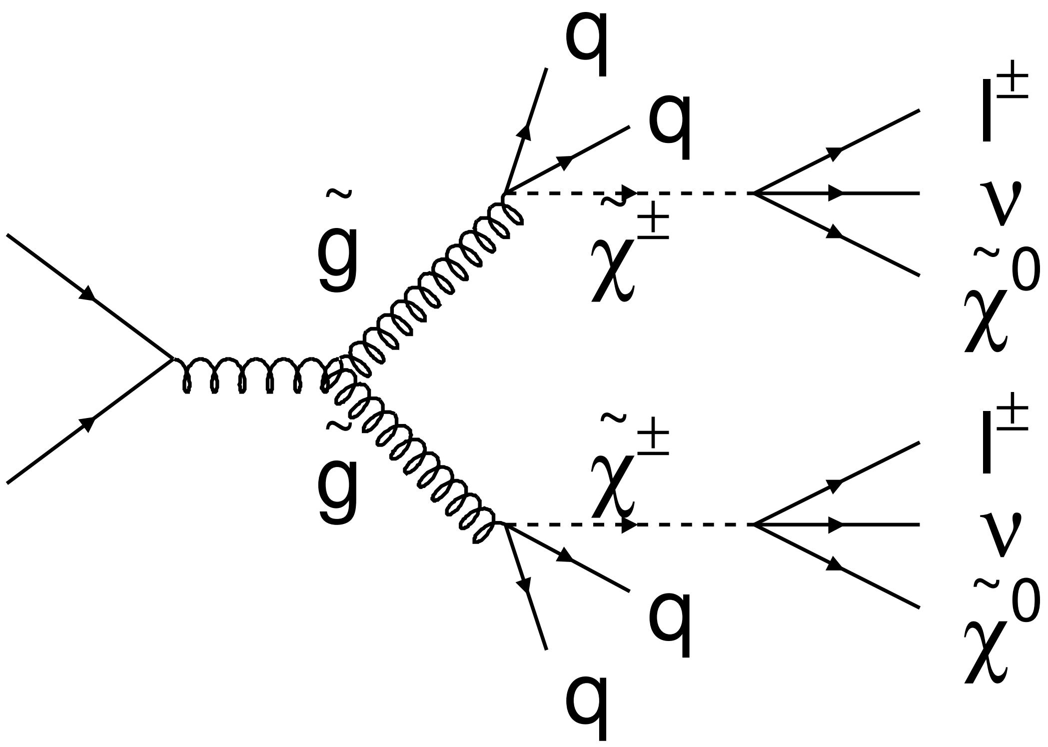
Dilepton Search

- produce $\tilde{g}$ pairs:



- $\tilde{g}$ is a Majorana particle $\Rightarrow$ like-sign dileptons
  (almost all dileptons are opposite sign)

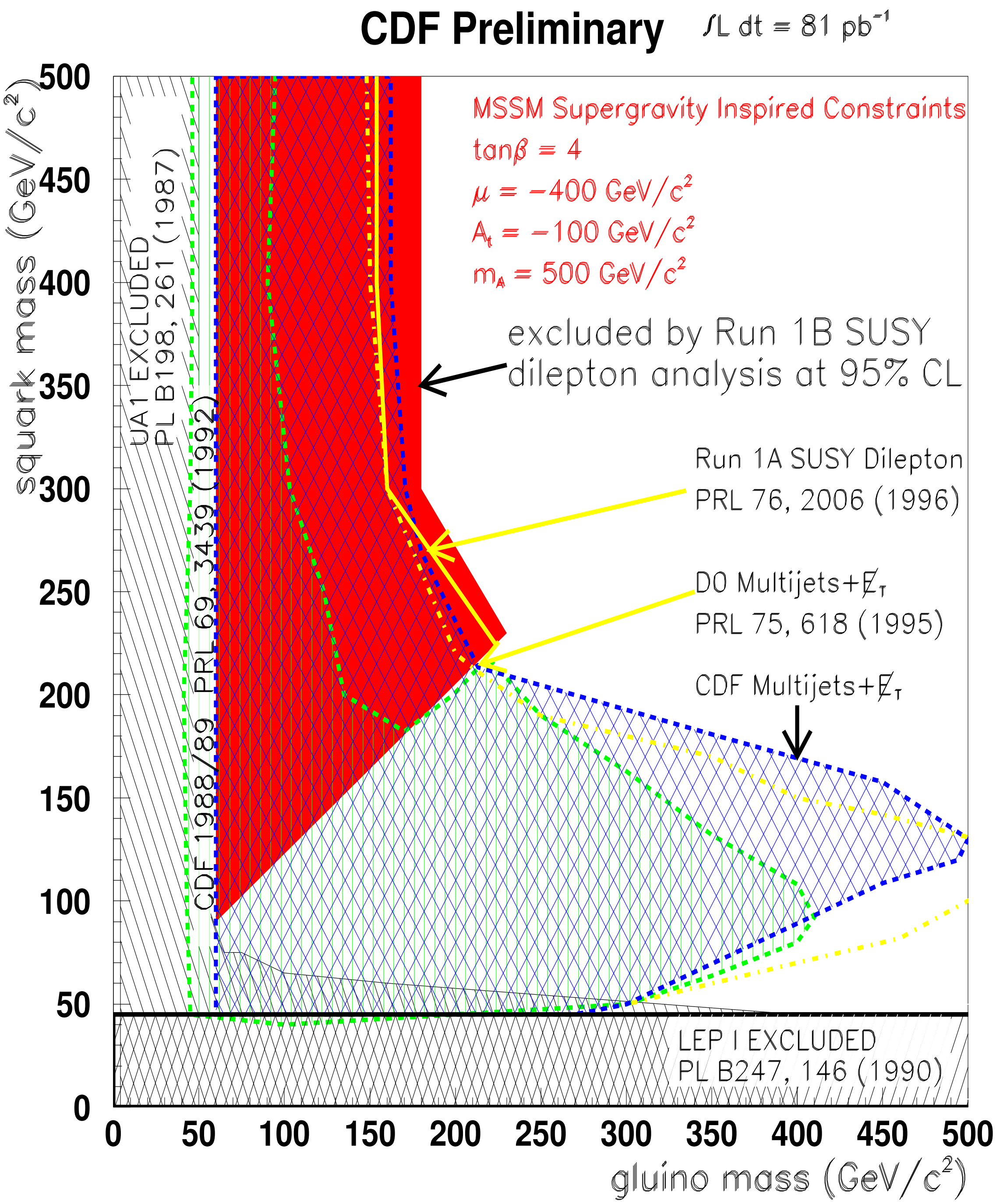
Begin with low-p_t dilepton triggers, require:

- an e or μ with $p_t > 11$ and a second with $p_t > 5$
- the leptons are isolated in the calorimeter and CTC
- two jets with $E_t > 15$
- corrected $\not{E}_t > 25$
- Z^0 veto

Left with 23 events, 2 like-sign

Expected backgrounds:

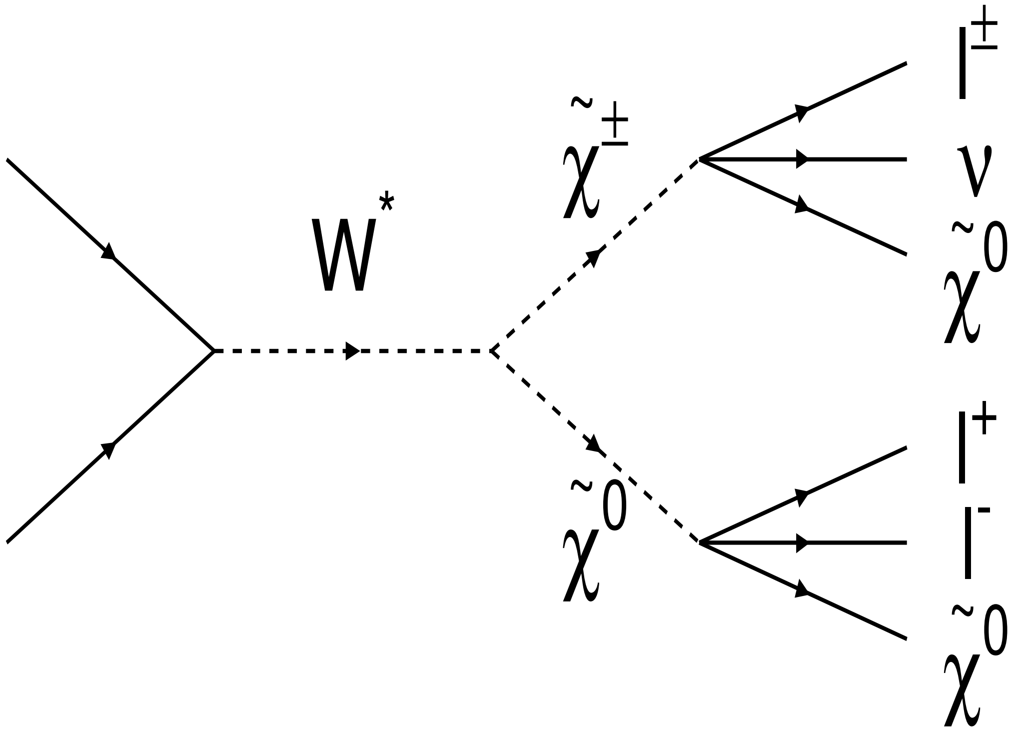
Source	Number expected
$t\bar{t}$	0.58
Drell-Yan	0.46
WW, WZ, ZZ	0.03
fake leptons	0.03
Total	$1.28 \pm 0.62 \pm 0.35$



CDF Preliminary
∫L dt = 81 pb⁻¹
MSSM Supergravity Inspired Constraints
tanβ = 4
μ = −400 GeV/c²
A_t = −100 GeV/c²
m_A = 500 GeV/c²
excluded by Run 1B SUSY dilepton analysis at 95% CL
Run 1A SUSY Dilepton PRL 76, 2006 (1996)
D0 Multijets+E̸_T PRL 75, 618 (1995)
CDF Multijets+E̸_T
UA1 EXCLUDED PL B198, 261 (1987)
CDF 1988/89 PRL 69, 3439 (1992)
LEP I EXCLUDED PL B247, 146 (1990)
squark mass (GeV/c²)
gluino mass (GeV/c²)
0
50
100
150
200
250
300
350
400
450
500

Trilepton Search

- produce $\tilde{\chi}_1^{\pm}\tilde{\chi}_2^0$:



Require:

- an e or μ with $p_t > 11$ and a two others with $p_t > 5$
- e^+e^- or $\mu^+\mu^-$

Left with 7 events

Expected backgrounds:

Source	Number expected
Drell-Yan/Z^0+fake lepton	3.0
$b\bar{b}/c\bar{c}$	4.7
Total	8.4 ± 2.9

Require $\not{E}_t > 15$GeV, left with 0 events

$M_{\tilde{\chi}_1^\pm}$ >66 GeV/c^2 for
$\tan\beta = 2$, $\mu = -400$, $M_{\tilde{q}} = 1.05 M_{\tilde{g}}$