INTRODUCTION

Squark searches

$$\tilde{t}_1 \to \mathbf{c}\tilde{\chi}_1^0 \quad \tilde{b}_1 \to \mathbf{b}\tilde{\chi}_1^0$$

- **SUSANA framework**
- **Background samples**
- **Preliminary results**

SUSANA framework

The squark analysis in the non-degenerate case are perfectly integrated in SUSANA

- SUSANA Track selection
- Jet reconstruction from Durham
- The neural network outputs are in the ntuples

Fast analysis using the 2 PC: DELSUSY1 and DELSUSY2
Data and MC from 1998 to 2000 have already been produced with SUSANA.
SUSANA meeting:

Wednesday at 11:30 room 13-2-005

http://delphiwww.cern.ch/teams/searches/delwww/susy/index.html

Squark searches

2000 data:

- **FATMEN=XSDST00A1/C0001-1582**
  Luminosity: 35.9 $pb^{-}1$ **(DRDB list)**
- **Available backgrounds at 204 GeV**

Selection:

- $E_t > 4$, **4 TPC tracks, 1 track** $P_t^{ch} > 1.5$
  $E(vd - id\, only)/E_{vis} < 0.15$
- **at least 6 charged tracks**
- $|cos(\theta thrust)| < 0.88$, $|cos(\theta Pmiss)| < 0.88$
- $P_t^{mis} > 4$
- $E_{stic} < 10$, $E_{emf} < 25$, $E_{cone}(45)/E_{vis} < 0.6$
- **Hermiticity cut**

Ndata = 601, Nmc = 595. $\pm$ **3.8**
Final selection using neural networks

Results:

	Ndata	Mmc
Sbottom $\Delta M \geq 30$	**0**	$\mathbf{1.22 \pm 0.16}$
Sbottom $10 \leq \Delta M < 30$	**0**	$\mathbf{0.14 \pm 0.05}$
Sbottom	**0**	$\mathbf{1.27 \pm 0.16}$
Stop $\Delta M \geq 30$	**1**	$\mathbf{1.35 \pm 0.15}$
Stop $10 \leq \Delta M < 30$	**0**	$\mathbf{0.51 \pm 0.09}$
Stop	**1**	$\mathbf{1.60 \pm 0.16}$