Preliminary Results of the LEP Working Group on 4 Jets.

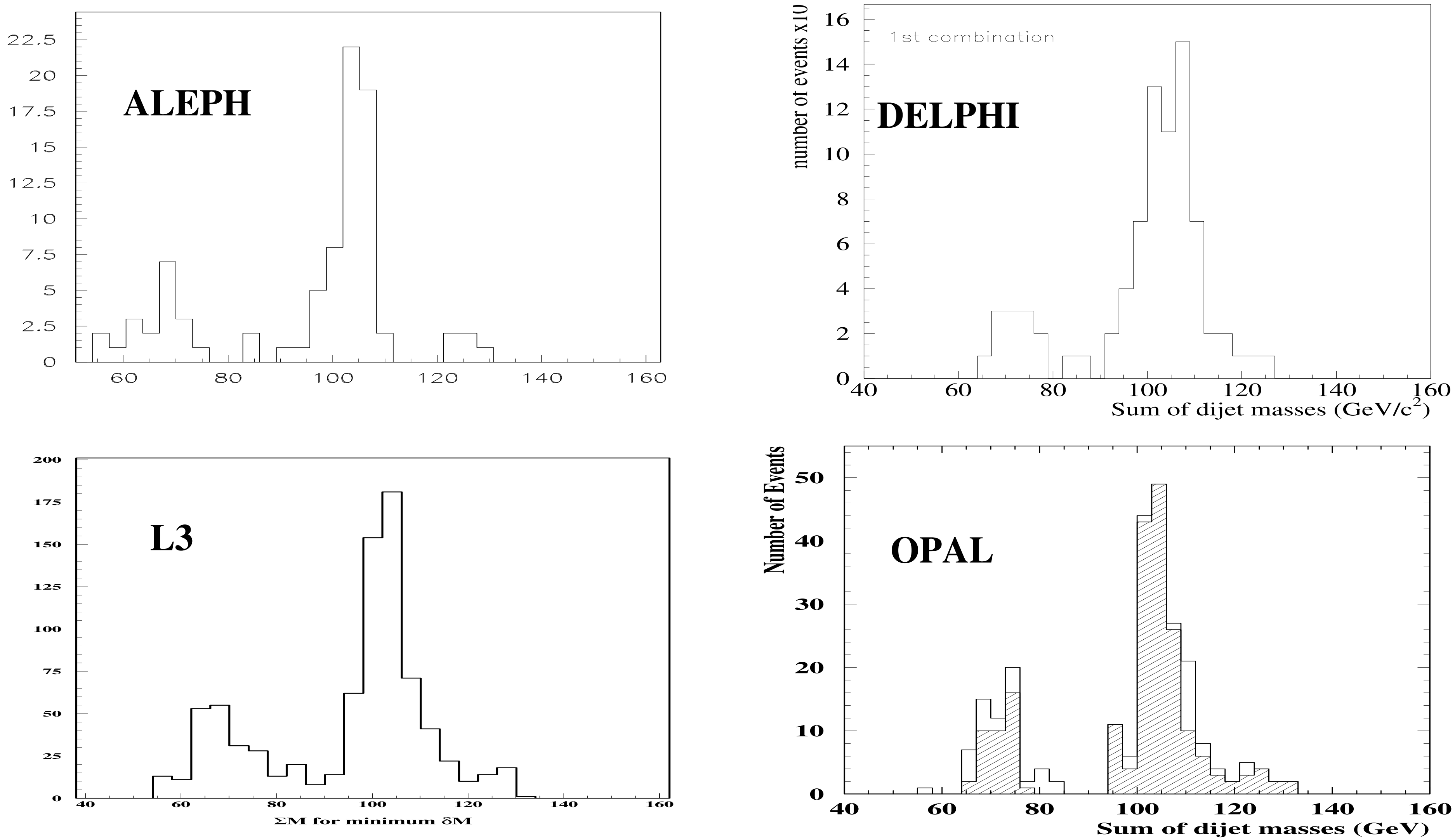
CERN 25.02.97

Brief status report, full detailed report in progress, numbers are not yet final!

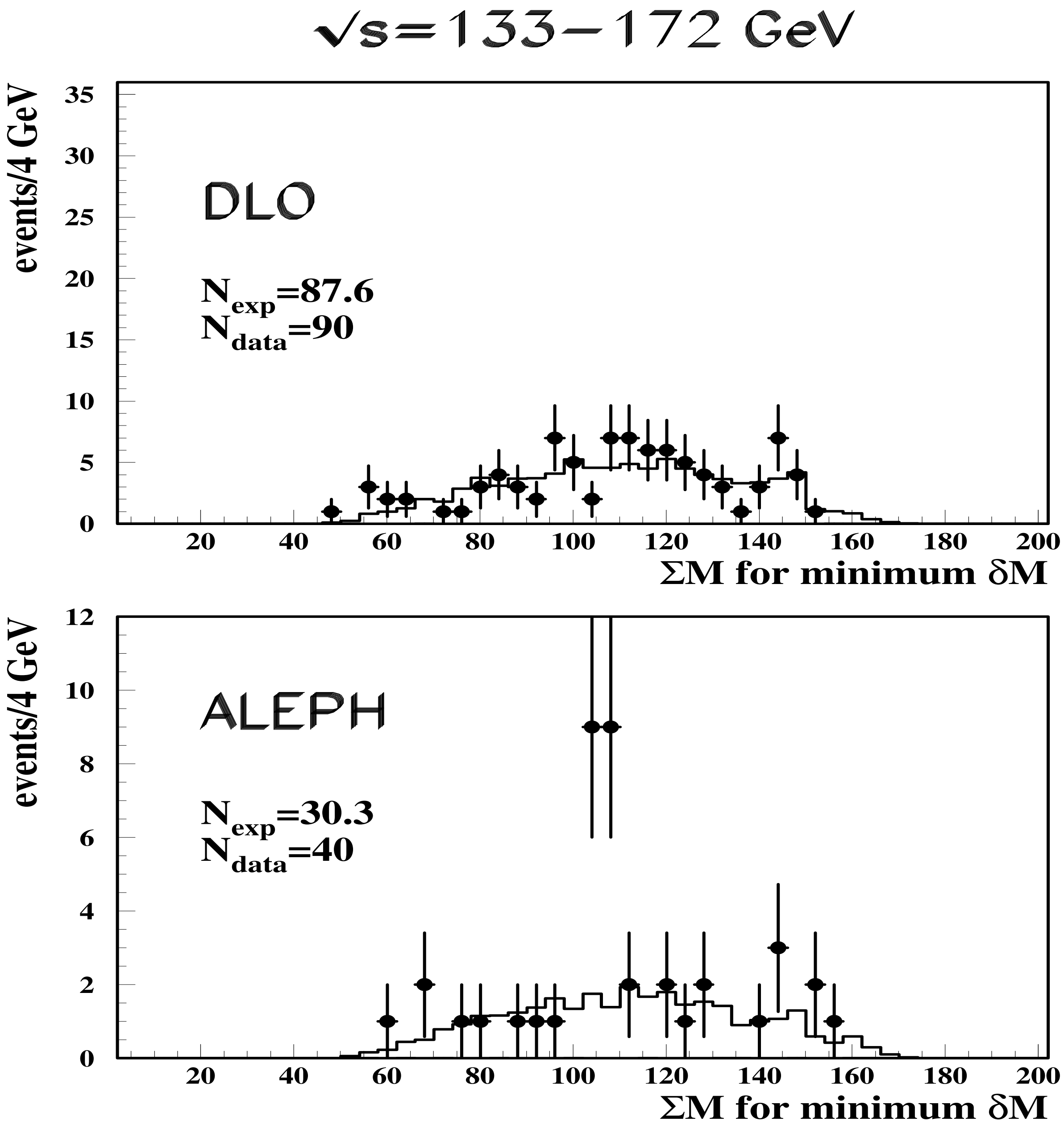
- **Efficiencies are 40%-44%, mass resolutions are 1.6 GeV to 2.1 GeV at Ecm = 133 GeV** (from hA MC , m=55 GeV).
  Resolution increases to ≈ 3 GeV at 161 / 172 GeV.
- **Simulation study, using 24 ALEPH 4-jet events at 133 GeV**
  (all 4 experiments have used the 4 vectors of the ALEPH events as input into their detector MC in typically 25 simulated experiments and then applied the respective selection programs)
- **Combinations of ΣM_{ij} distributions of the four experiments**

Simulations, using 24 ALEPH events at Ecm = 133 GeV

Sum of dijet masses, ΣM_{ij}, for smallest mass difference, ΔM_{ij}



→ All experiments have similar sensitivity for such events.



combination with smallest mass difference

PRELIMINARY

Limit (95% CL) :

$\sigma<0.5$ pb

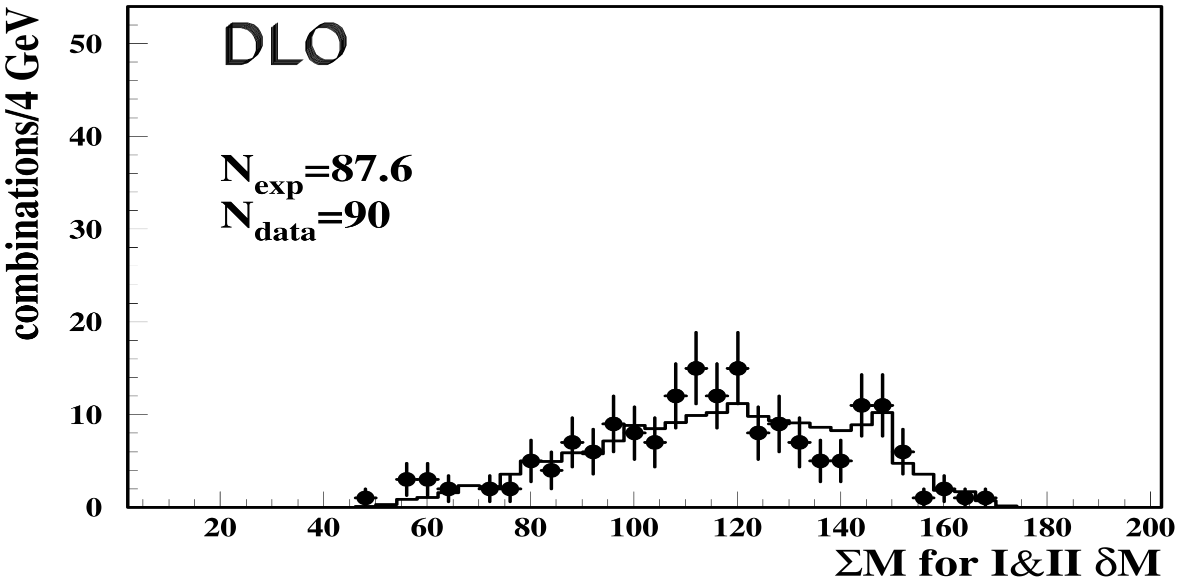
"peak" cross- section:

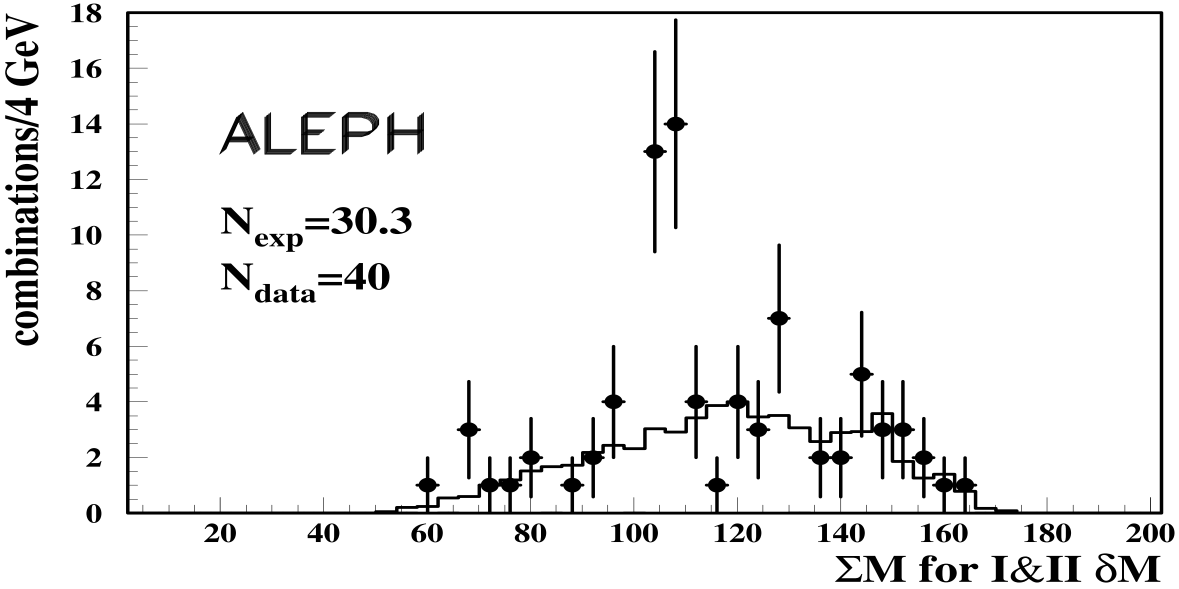
$\sigma=2.2 \pm 0.5$ pb

constant cross section assumed.

$\sqrt{s}$=133–172 GeV

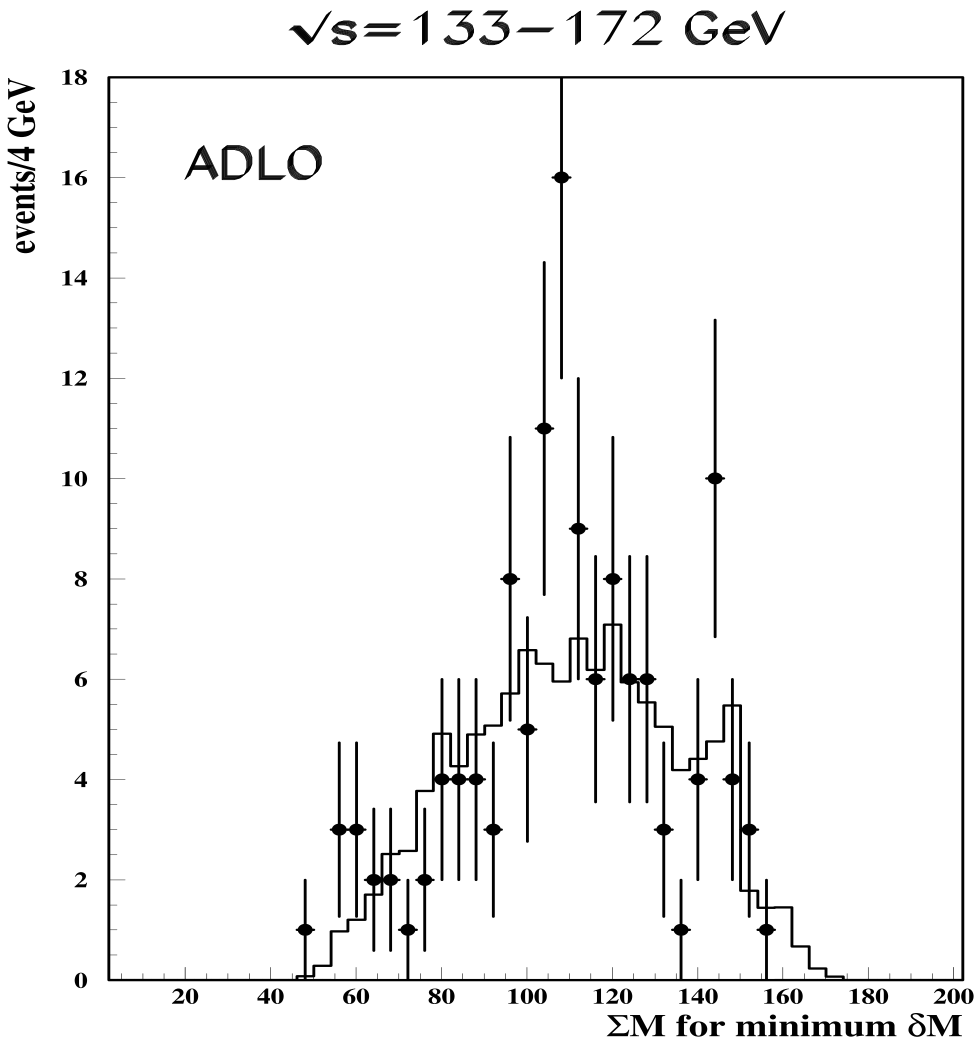
PRELIMINARY





combination with smallest and next to smallest mass difference (2 entries / event)

PRELIMINARY



Assuming no systematic error from any of the four experiments and from the evaluation of expectations from Standard Model, the four experiments are combined.

Number of events observed / expected

for Ecm = 133 - 172 GeV

in two mass intervals around 106 GeV *)

	106 $\pm$ 4 GeV observed / expected	106 $\pm$ 6 GeV observed / expected
ALEPH	18 / 3.1	19 / 4.6
DLO	9 / 9.2	14 / 14.5
ADLO	27 / 12.3	33 / 19.1

*) final numbers and probabilities will be derived in $\pm$ 2 σ intervals of mass resolution

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DLO = DELPHI + L3 + OPAL combined   ADLO = ALEPH + DLO