

2nd Look at Multiplicity in Jets

through Silicon detectors

(first look made in 1989 by Anna Delin)

- ① Data selection (cuts and corrections)
- ② Jets in silicon (how can be seen)

Data selection

vertex (TOF)

$$\begin{aligned} X &= 0 \\ Y &= 0 \\ |z| &< 500 \end{aligned} \quad \left(\text{after fit: } \begin{array}{l} x \approx 12 \text{ for inner, } 8 \text{ for outer silicon} \\ y \approx 4 \text{ --- " ---, } 0 \text{ --- " --- " ---} \end{array} \right)$$

jets (calo) ... standard cuts

$$|\eta_j| < 2$$

$$E_t^j > 35 \text{ GeV}$$

$$E_t^{\text{next}} < 20 \text{ GeV}$$

$$E^{\Sigma} < 630 \text{ GeV}$$

$$n_j = 2$$

silicon

angular correction

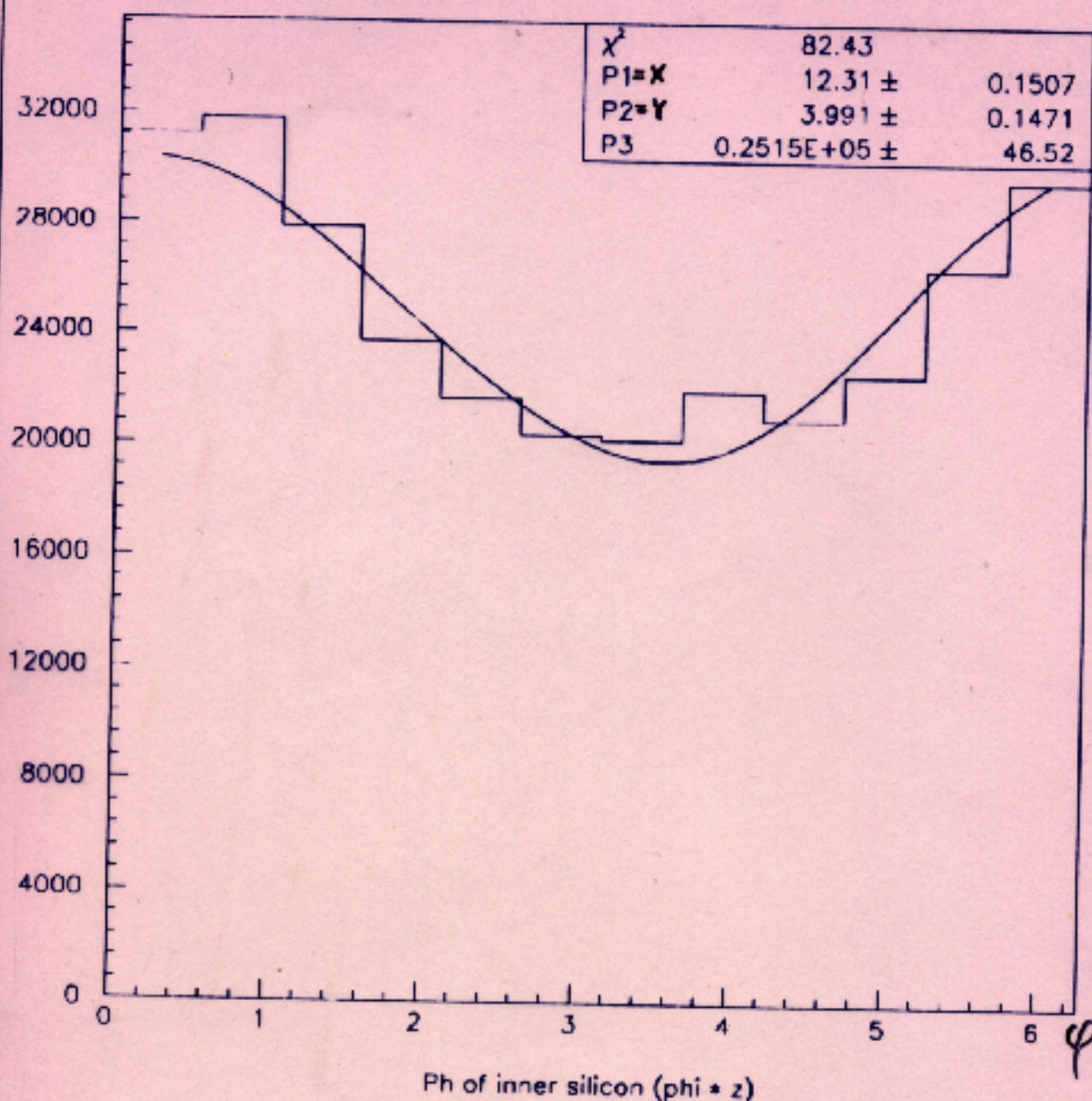
$$\begin{aligned} p_T &\in \langle 0.6, 1.6 \rangle \text{ Nips} &\Rightarrow 1 \text{ particle} \\ p_T &\in \langle 1.6, 3.0 \rangle \text{ Nips} &\Rightarrow 2 \text{ particles} \end{aligned} \quad (\text{not good})$$

preliminary analysis of ≈ 5000 23H events,
after all cuts ≈ 1500 events

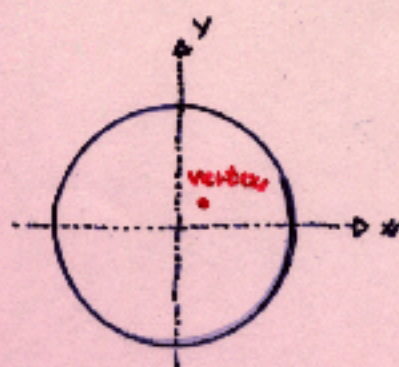
inner silicon

Vertex-fit

02/12/90 19.16

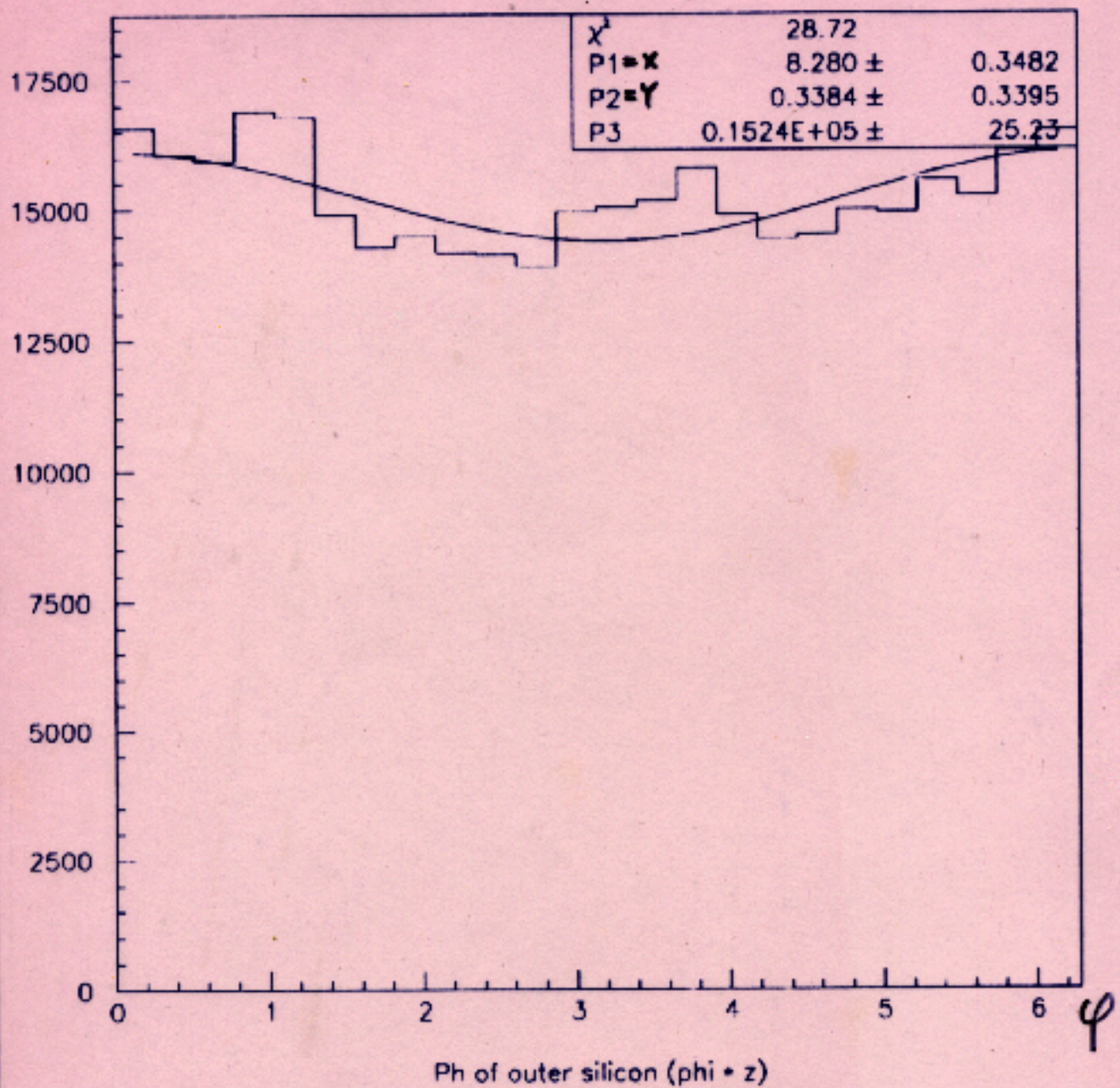


fit to ϕ -dependence of Ph
(should be const.)



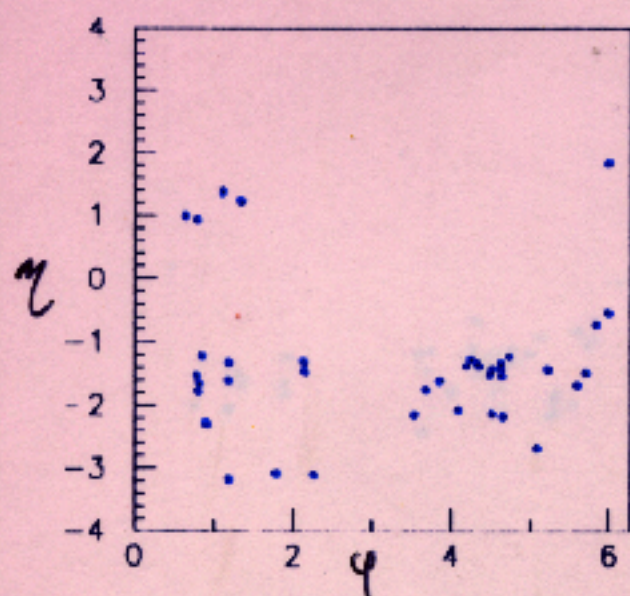
outer silicon

02/12/90 19.18

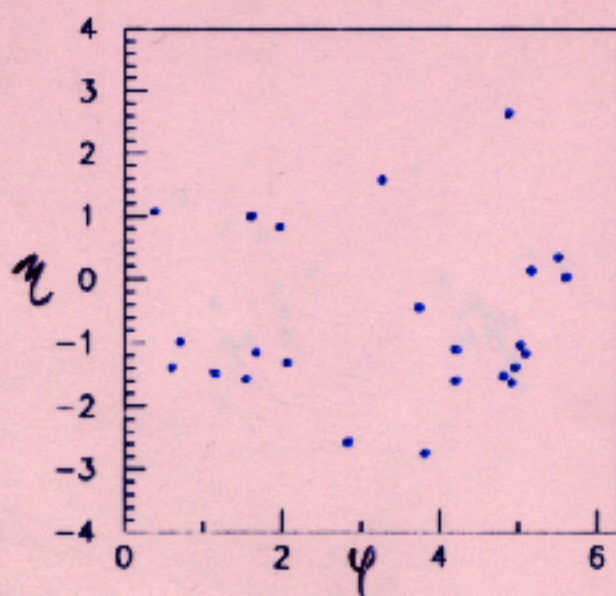


inner silicon

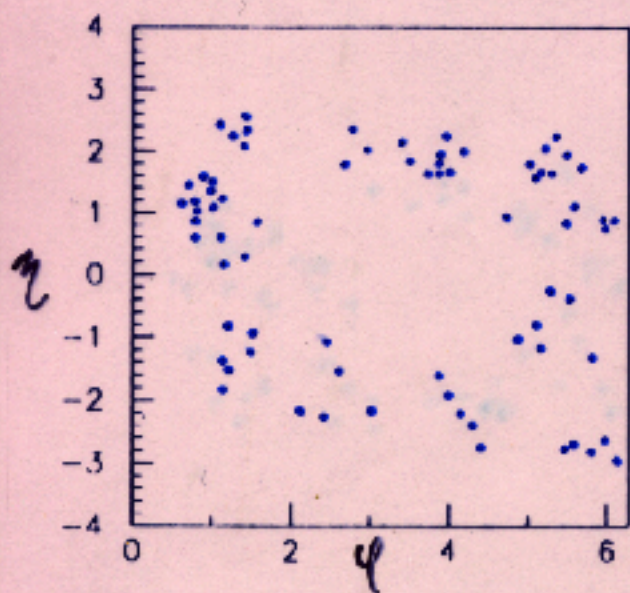
04/12/90 21.53



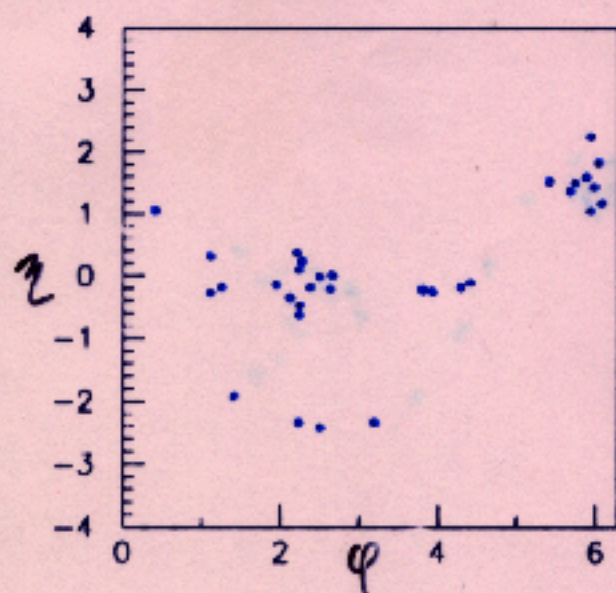
sample event (inner silicon)



sample event (inner silicon)



sample event (inner silicon)

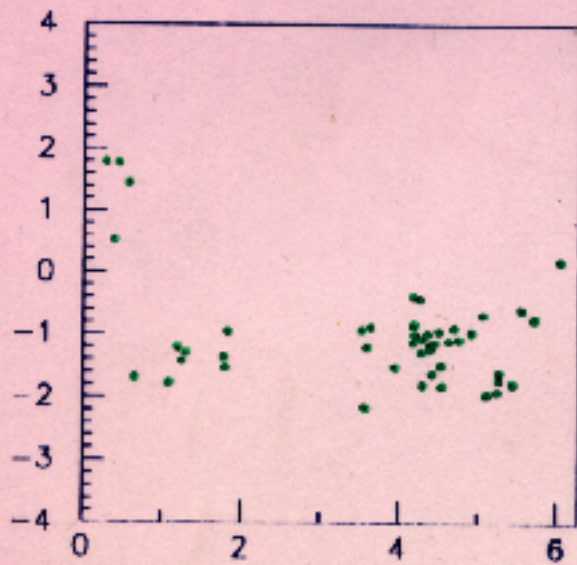


sample event (inner silicon)

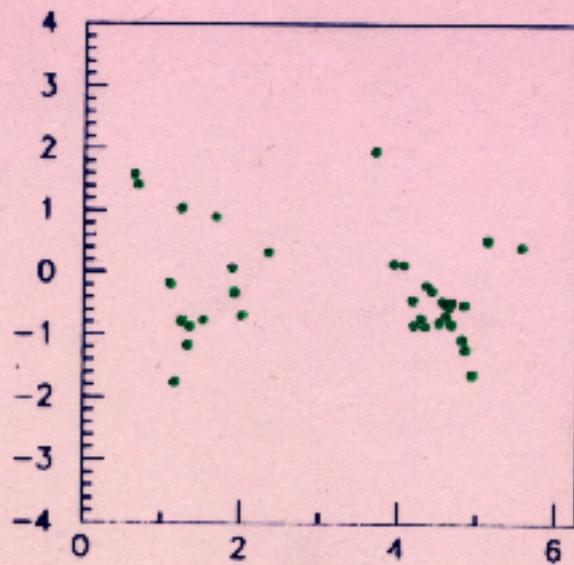
4 "best" events from 10 events randomly
selected from sample ≈ 1500 events

outer silicon

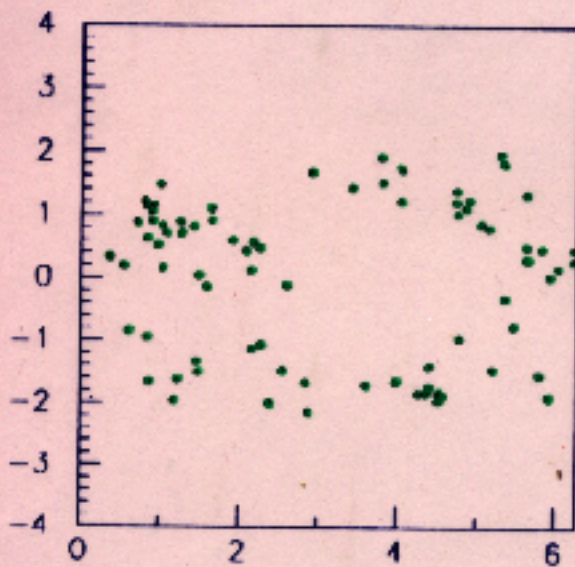
04/12/90 21.52



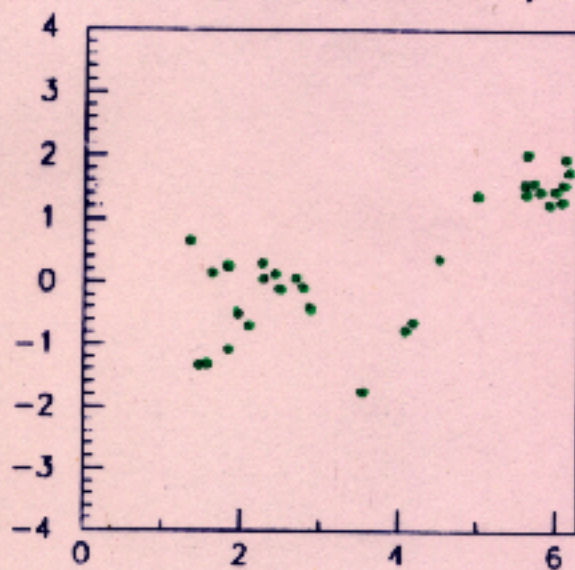
sample event (outer silicon)



sample event (outer silicon)



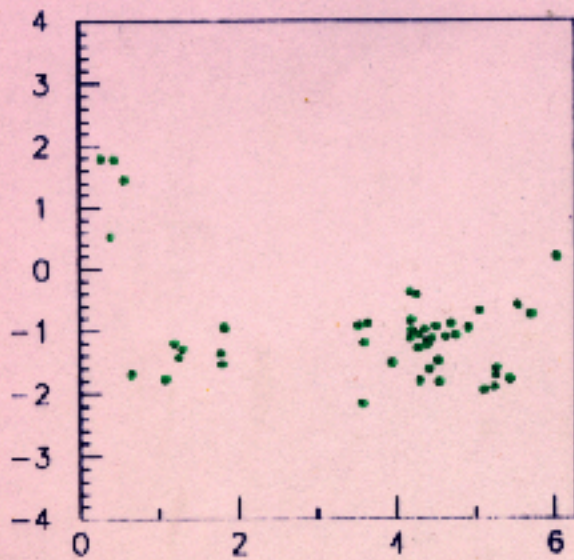
sample event (outer silicon)



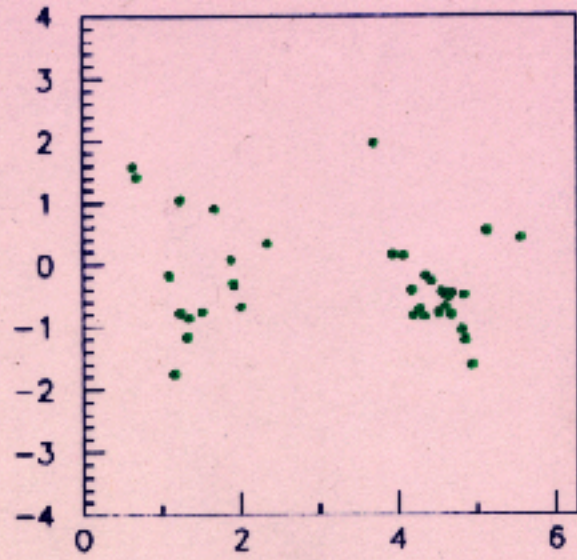
sample event (outer silicon)

outer silicon

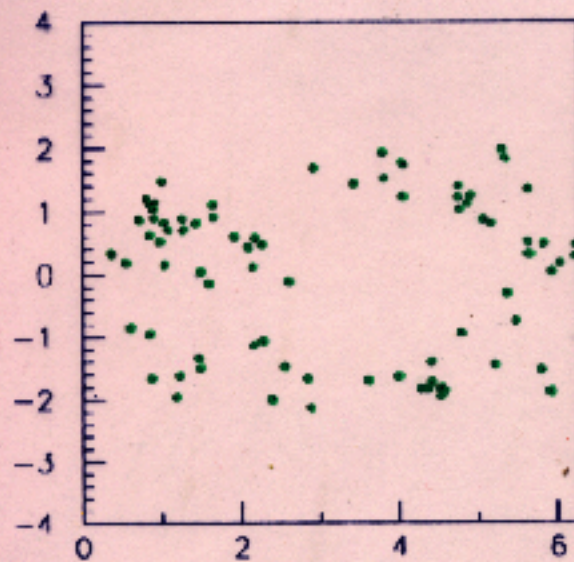
04/12/90 21.52



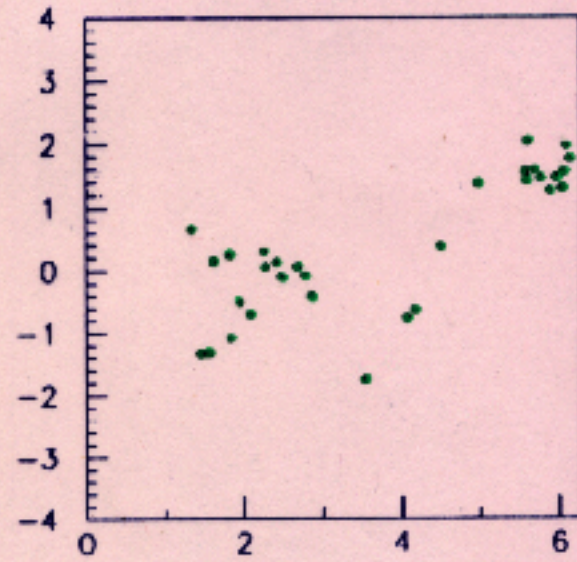
sample event (outer silicon)



sample event (outer silicon)



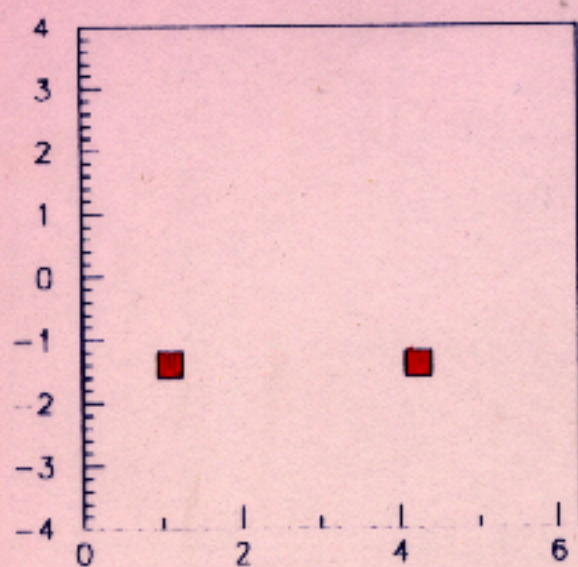
sample event (outer silicon)



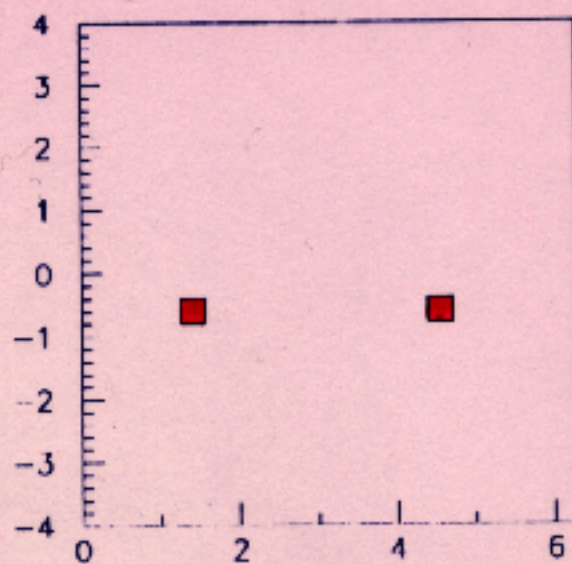
sample event (outer silicon)

calo

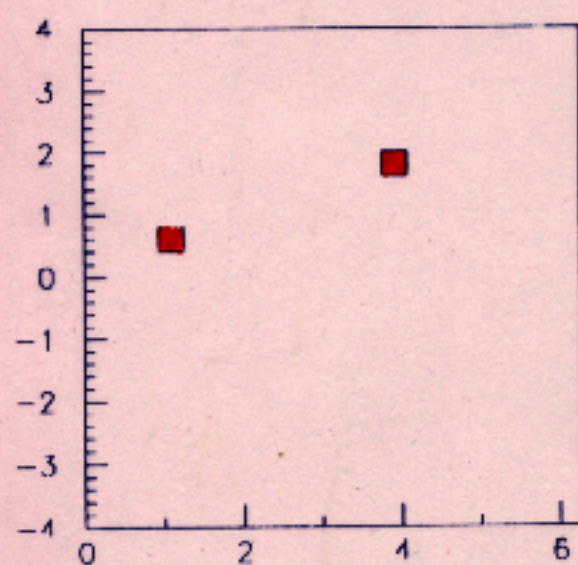
04/12/90 22.07



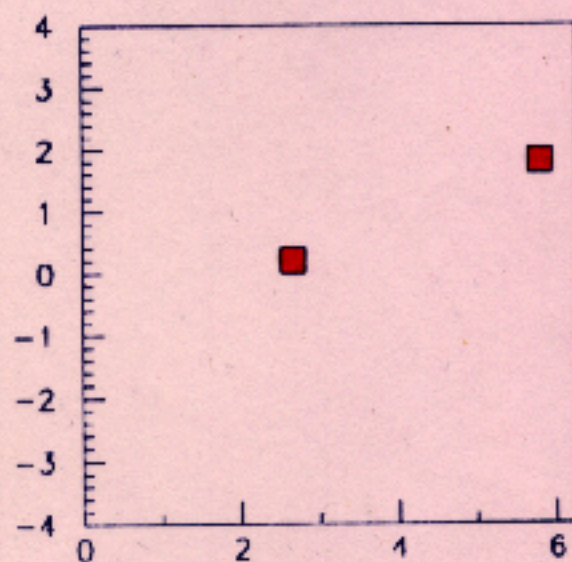
sample event (calorimetr)



sample event (calorimetr)



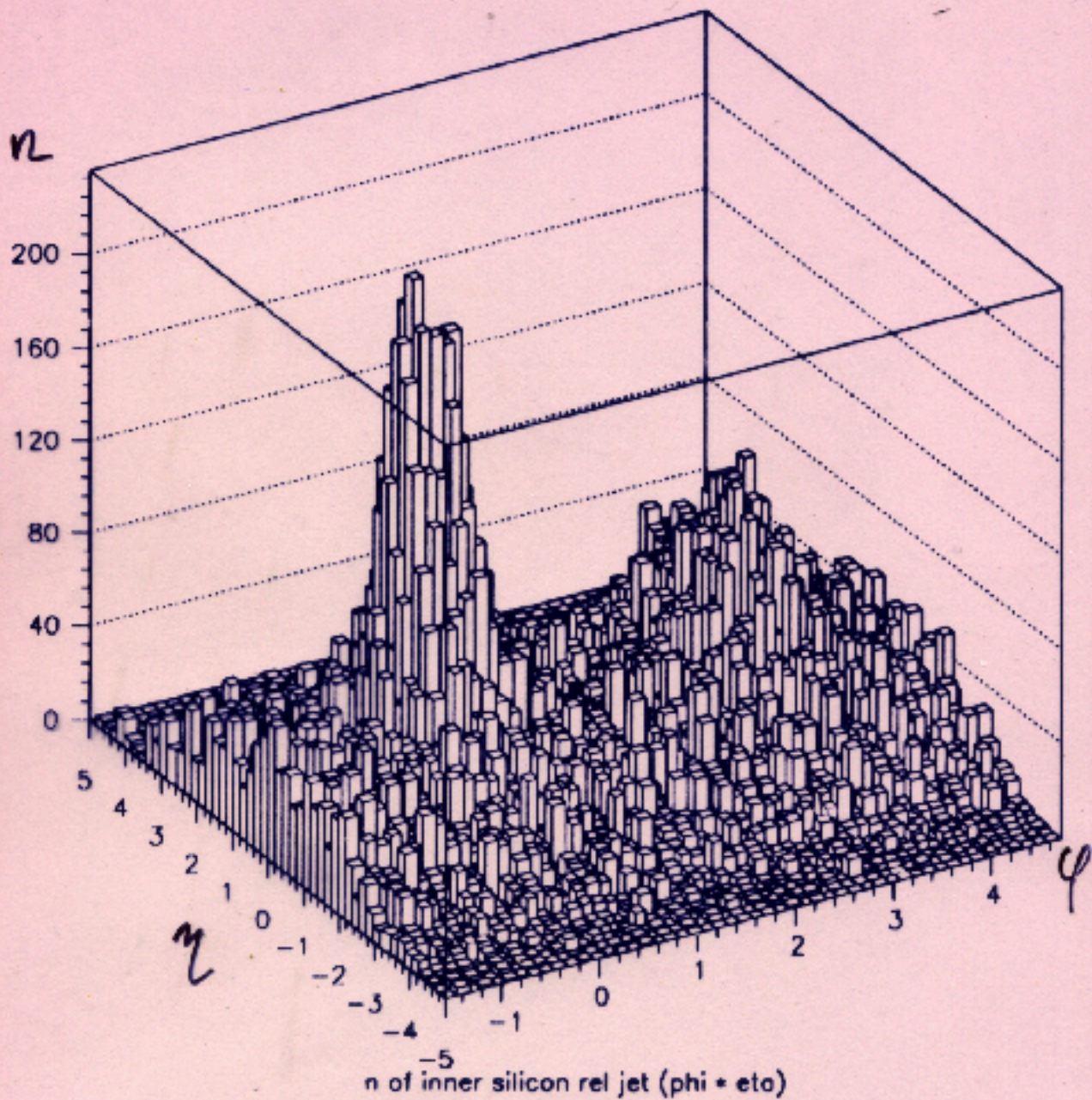
sample event (calorimetr)



sample event (calorimetr)

inner silicon

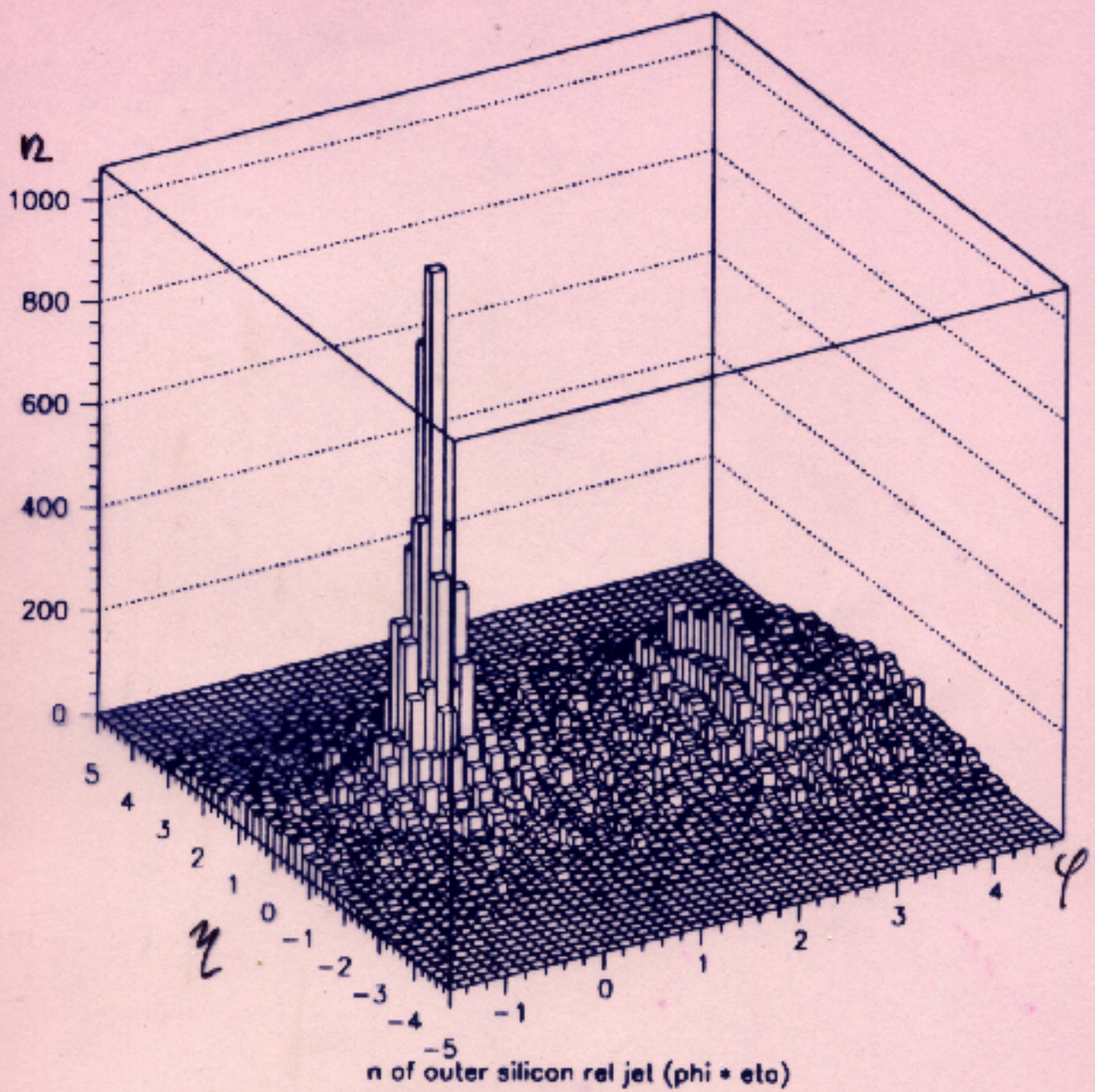
04/12/90 22.40



coordinates - transformation 1: 1st jet has $\phi = \eta = 0$

outer silicon

04/12/90 22.45

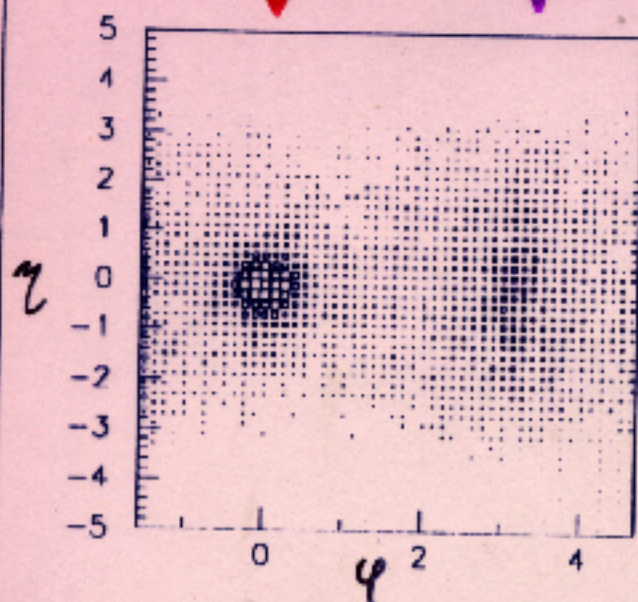


inner silicon

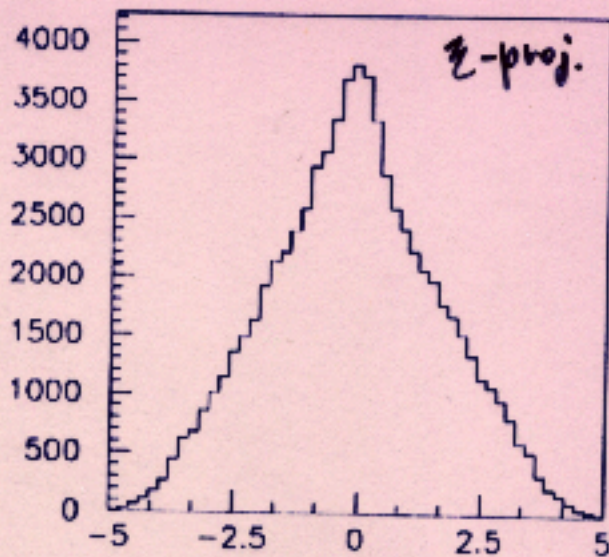
02/12/90 17.13

↓ 1.jet

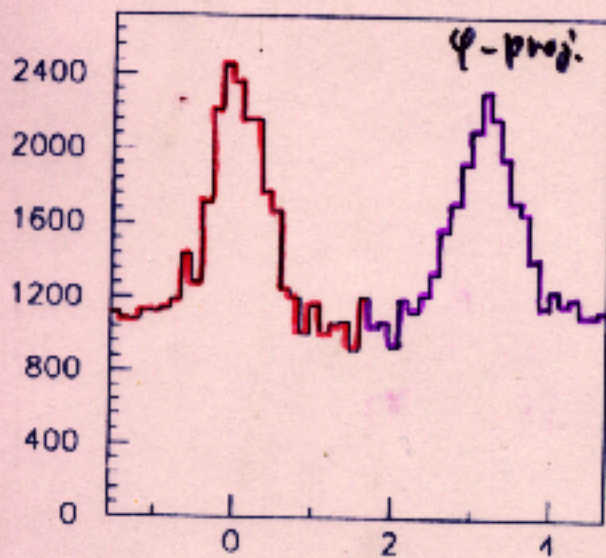
↓ 2.jet



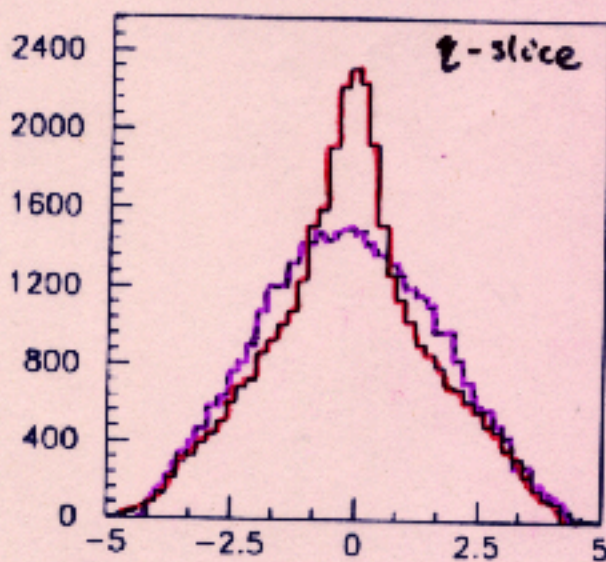
n of inner silicon rel jet ($\phi + \eta$)



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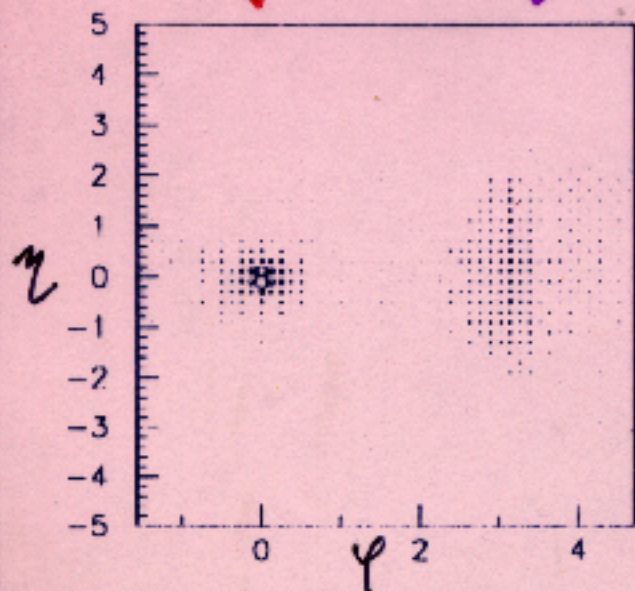
n of inner silicon rel jet ($\phi + \eta$)

outer silicon

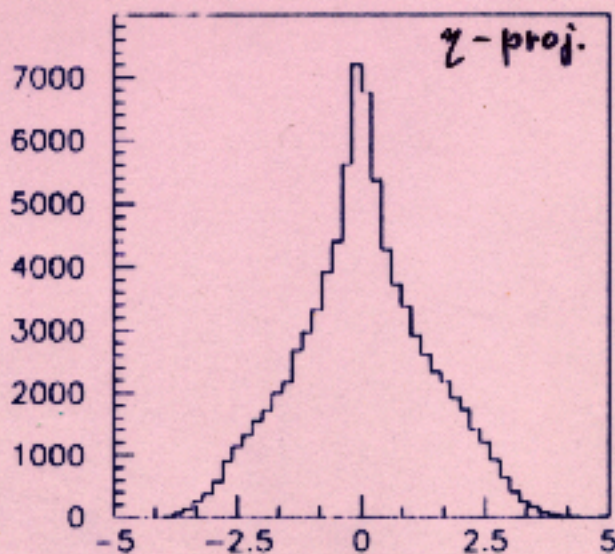
02/12/90 17.28

↓ 1. jet

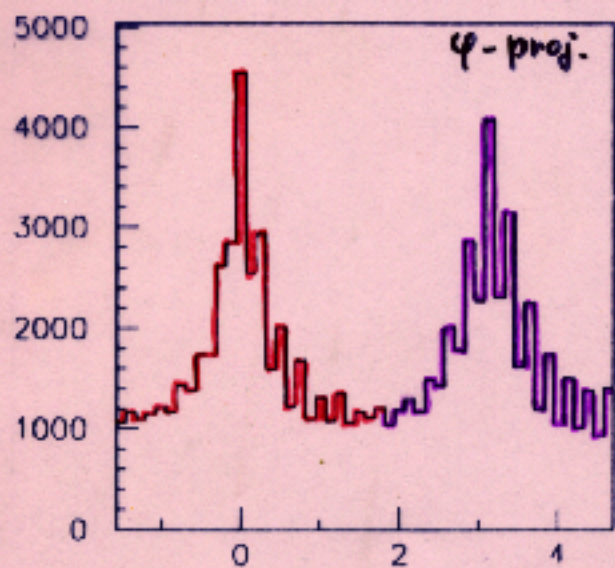
↓ 2. jet



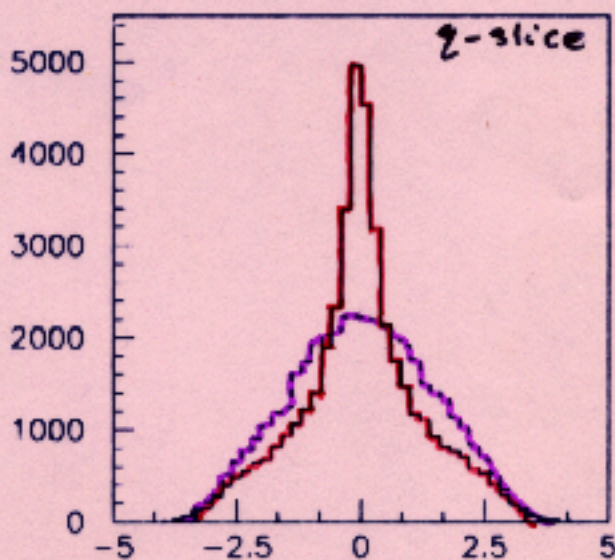
n of outer silicon rel jet ($\phi + \eta$)



n of outer silicon rel jet ($\phi + \eta$)



n of outer silicon rel jet ($\phi + \eta$)



n of outer silicon rel jet ($\phi + \eta$)