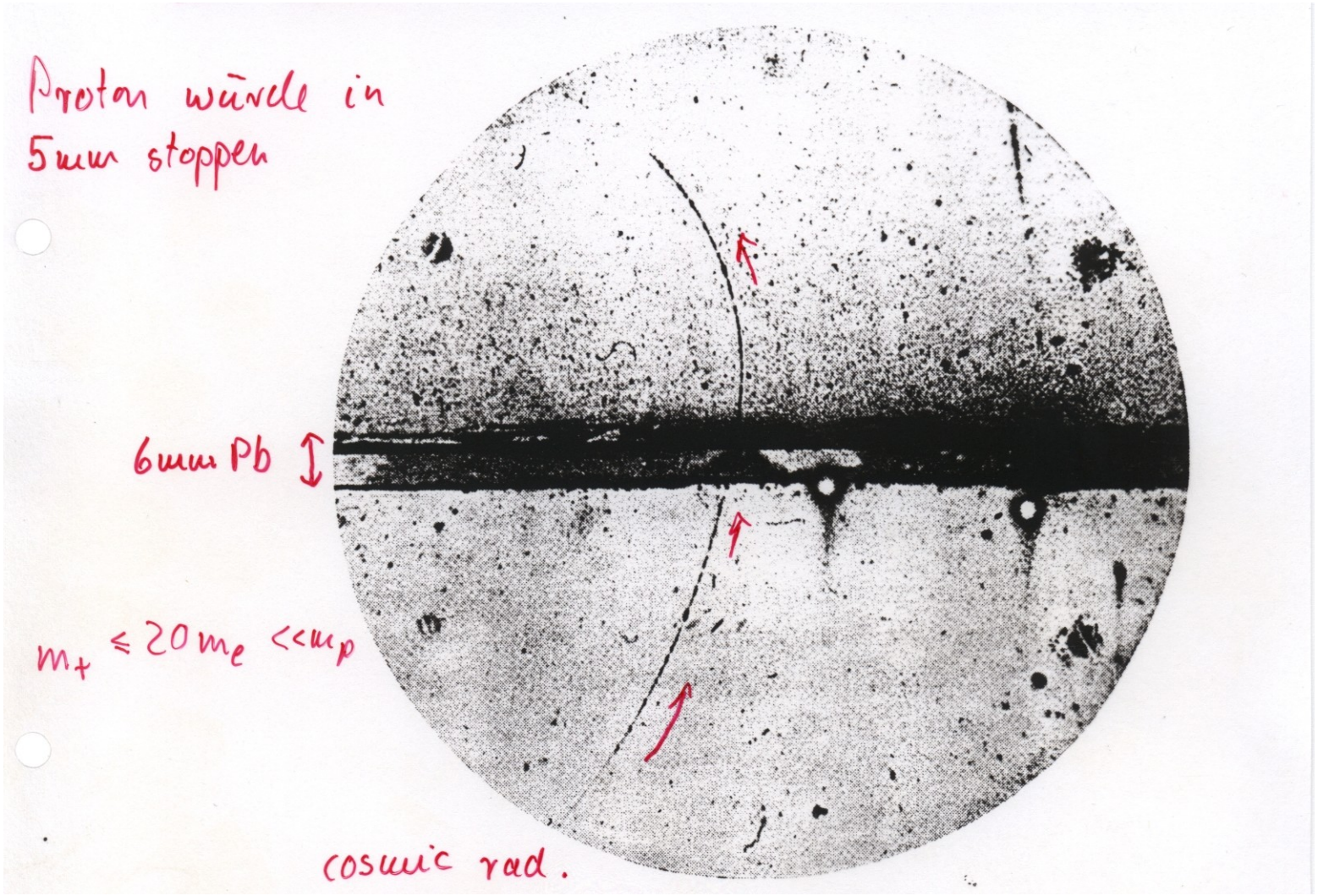
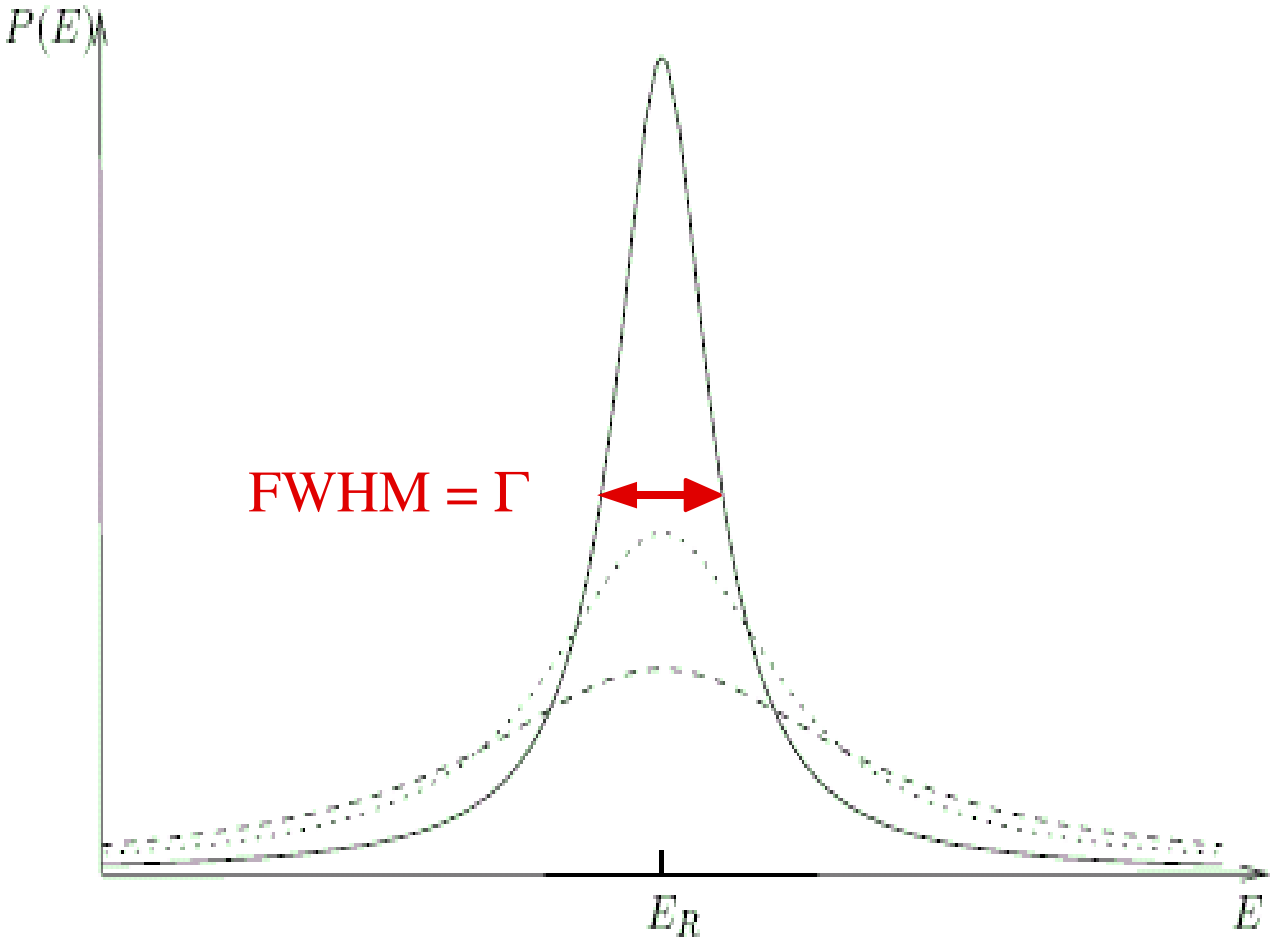
	stark	elektromagn.	schwach	Gravitation
Kopplungskonst	$g_s^2/\hbar c \simeq 15$ $\alpha_s \simeq 1$	$e^2/\hbar c = 1/137$	$g^2/\hbar c = 4 \cdot 10^{-3}$	$\frac{G_N m^2}{\hbar c} = 6 \cdot 10^{-39}$
Austauschboson	Pion, --- 139 MeV Gluon 0 MeV	Photon 0 MeV	$W^\pm$ 84 GeV Z^0 92 GeV	Graviton ?
Stärke rel. zu Stärke WW bei 1 fm	$\equiv 1$	10^{-2}	10^{-13}	10^{-38}
typ. Zeitskala für Zerfälle	10^{-23} s	10^{-20} s	10^{-10} s	?
typ. Reichweite	$1.4 \cdot 10^{-15}$ m	∞	$2 \cdot 10^{-18}$ m	∞

Entdeckung des Positrons in kosmischer Strahlung durch Anderson
Phys. Rev. 43 (1933) 491 in Nebelkammer
Impuls (aus Krümmung der Spur) 23 MeV/c



Breit-Wigner Resonanz



e + 4 jet event

40758_44414

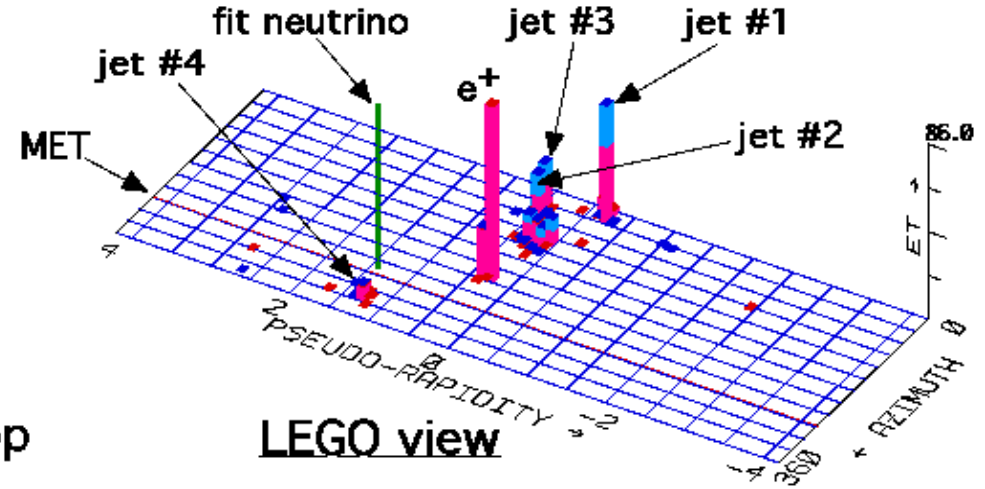
24-September, 1992

TWO jets tagged by SVX

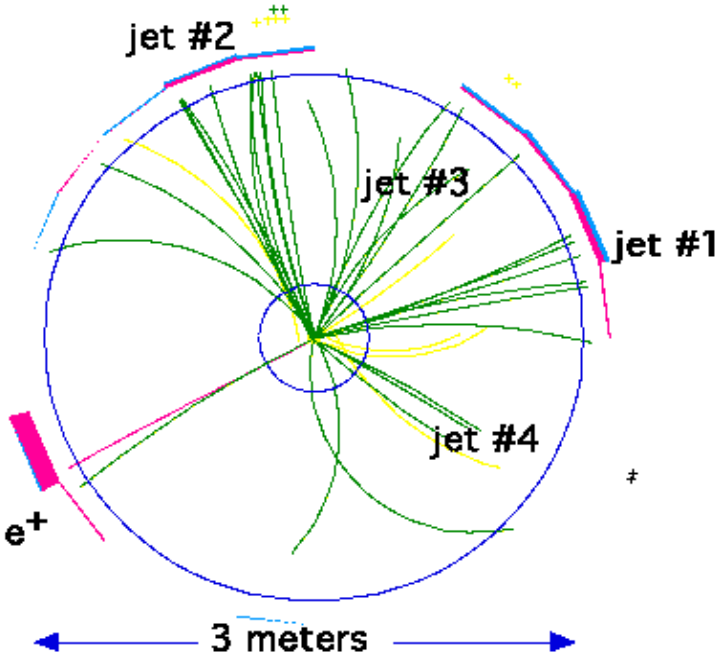
fit top mass is 170 +- 10 GeV

e^+, Missing E_t, jet #4 from top

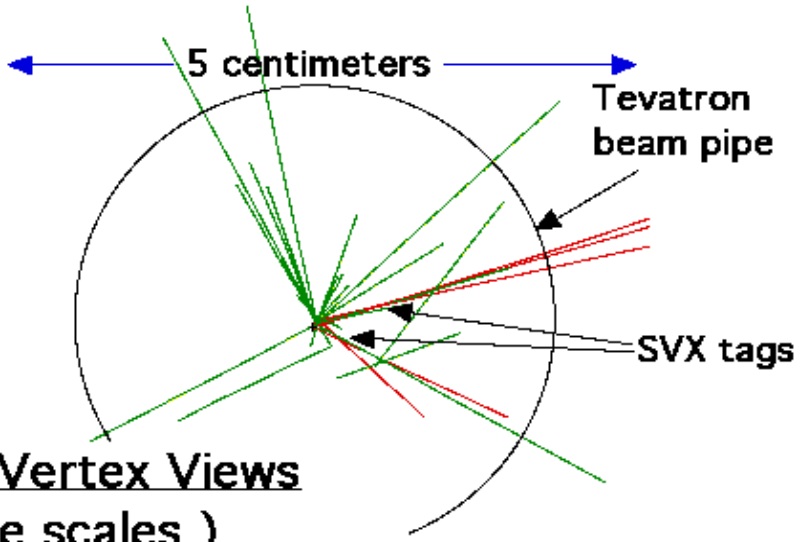
jets 1,2,3 from top (2&3 from W)



LEGO view

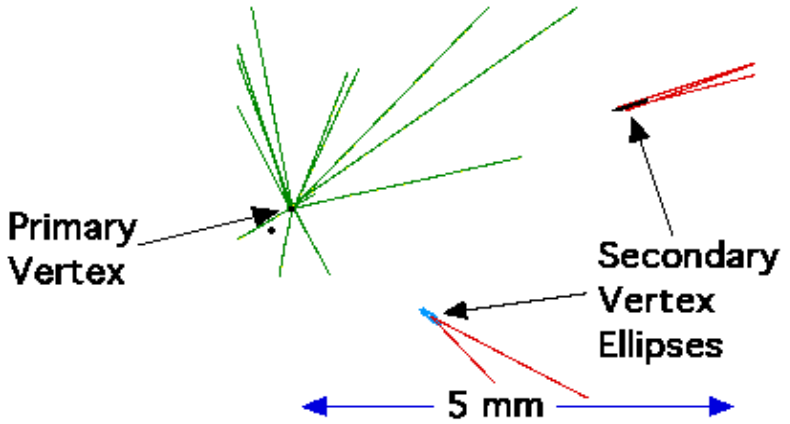


Tracking View

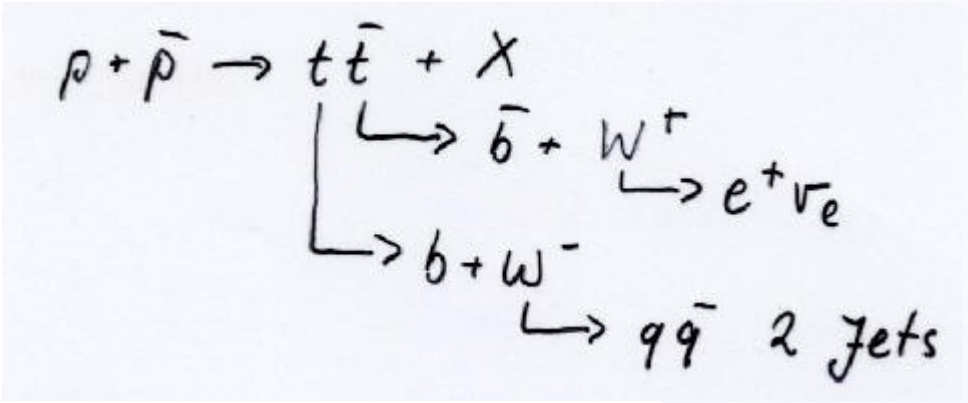


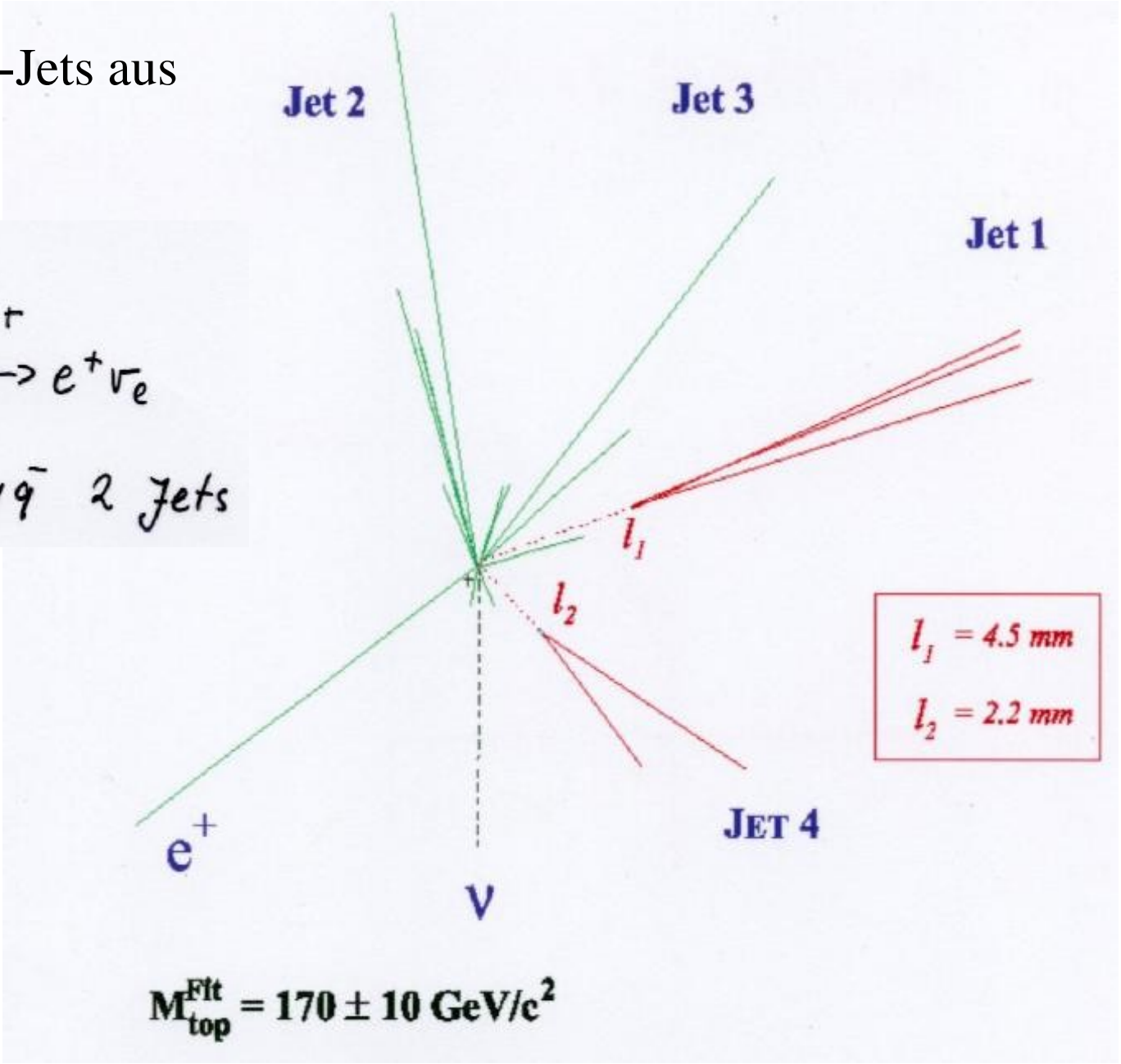
Two Vertex Views

(note scales)



CDF: Nachweis von 2 b-Jets aus $t\bar{t}$ decay





3 Generationen von je 2 Quarks:

alle sind Fermionen mit Spin ½

u und d-Quark haben eine spin-ähnliche Quantenzahl Isospin I = 1/2

Generation	Flavour	q	m	I_3	S	C	B	T	A
1	d (down)	$-1/3$	$\simeq 2\,\mathrm{MeV}$	$-1/2$	0	0	0	0	1/3
	u (up)	$+2/3$	$\simeq 5\,\mathrm{MeV}$	$+1/2$	0	0	0	0	1/3
2	s (strange)	$-1/3$	$\simeq 100\,\mathrm{MeV}$	0	-1	0	0	0	1/3
	c (charm)	$+2/3$	$\simeq 1{,}3\,\mathrm{GeV}$	0	0	1	0	0	1/3
3	b (bottom)	$-1/3$	$\simeq 4{,}5\,\mathrm{GeV}$	0	0	0	-1	0	1/3
	t (top)	$+2/3$	$\simeq 174\,\mathrm{GeV}$	0	0	0	0	1	1/3