Technicolor

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MASS LIMITS for Resonances in Models of Dynamical Electroweak Symmetry Breaking

VALUE (GeV)	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •					
		[1] AFFOLDER	00F	CDF	color-singlet techni-ρ, $\rho_T \to W\pi_T$, $2\pi_T$
>600	95	[2] AFFOLDER	00K	CDF	color-octet techni-ρ, $\rho_{T8} \to 2\pi_{LQ}$
>480	95	[3] AFFOLDER	00L	CDF	top-color Z'
none 350–440	95	[4] ABE	99F	CDF	color-octet techni-ρ, $\rho_{T8} \to \overline{b}b$
>465	95	[5] ABE	99H	CDF	color-octet techni-ρ, $\rho_{T8} \to 2\pi_{LQ}$
		[6] ABE	99N	CDF	techni-ω, $\omega_T \to \gamma\overline{b}b$
none 260–480	95	[7] ABE	97G	CDF	color-octet techni-ρ, $\rho_{T8} \to$ 2jets

[1] AFFOLDER 00F search for ρ_T decaying into $W\pi_T$ or $\pi_T\pi_T$ with $W \to \ell\nu$ and $\pi_T \to \overline{b}b$, $\overline{b}c$. See Fig. 1 in the above Note on "Dynamical Electroweak Symmetry Breaking" for the exclusion plot in the $M_{\rho_T} - M_{\pi_T}$ plane.

[2] AFFOLDER 00K search for the ρ_{T8} decaying into $\pi_{LQ}\pi_{LQ}$ with $\pi_{LQ} \to b\nu$. For $\pi_{LQ} \to c\nu$, the limit is $M_{\rho_{T8}}$ >510 GeV. See their Fig. 2 and Fig. 3 for the exclusion plot in the $M_{\rho_{T8}} - M_{\pi_{LQ}}$ plane.

[3] AFFOLDER 00L search for top-color $Z'_{\rm top}$ decaying into $\overline{t}t$. The quoted limit is for $Z'_{\rm top}$ with decay width Γ=0.012 $M_{Z'}$. For Γ=0.04 $M_{Z'}$, the limit becomes 780 GeV.

[4] ABE 99F search for a new particle X decaying into $b\overline{b}$ in $p\overline{p}$ collisions at $E_{\rm cm}$= 1.8 TeV. See Fig. 7 in the above Note on "Dynamical Electroweak Symmetry Breaking" for the upper limit on $\sigma(p\overline{p} \to X)\times$B($X \to b\overline{b}$). ABE 99F also exclude top gluons of width Γ=0.3M in the mass interval 280 <M< 670 GeV, of width Γ=0.5M in the mass interval 340 <M< 640 GeV, and of width Γ=0.7M in the mass interval 375 <M< 560 GeV.

[5] ABE 99H search for the color-octet techni-ρ decaying into a pair of color-triplet technipions which subsequently decay into τ+ jet. See Fig. 6 in the above Note on "Dynamical Electroweak Symmetry Breaking" for the exclusion plot in the $M_{\rho_{T8}} - M_{\pi_{LQ}}$ plane.

[6] ABE 99N search for the techni-ω decaying into $\gamma\pi_T$. The technipion is assumed to decay $\pi_T \to b\overline{b}$. See Fig. 2 in the above Note on "Dynamical Electroweak Symmetry Breaking" for the exclusion plot in the $M_{\omega_T} - M_{\pi_T}$ plane.

[7] ABE 97G search for a new particle X decaying into dijets in $p\overline{p}$ collisions at $E_{\rm cm}$= 1.8 TeV. See Fig. 5 in the above Note on "Dynamical Electroweak Symmetry Breaking" for the upper limit on $\sigma(p\overline{p} \to X)\times$B($X \to 2j$).

REFERENCES FOR Technicolor

AFFOLDER	00F	PRL 84 1110	T. Affolder *et al.*	(CDF Collab.)
AFFOLDER	00K	PRL 85 2056	T. Affolder *et al.*	(CDF Collab.)
AFFOLDER	00L	PRL 85 2062	T. Affolder *et al.*	(CDF Collab.)
ABE	99F	PRL 82 2038	F. Abe *et al.*	(CDF Collab.)
ABE	99H	PRL 82 3206	F. Abe *et al.*	(CDF Collab.)
ABE	99N	PRL 83 3124	F. Abe *et al.*	(CDF Collab.)
ABE	97G	PR D55 R5263	F. Abe *et al.*	(CDF Collab.)