9. HIGH-ENERGY COLLIDER PARAMETERS: e^+e^- Colliders (I)

The numbers here were received from representatives of the colliders in 1993 or early 1994. Quantities are, where appropriate, r.m.s. H and V indicate horizontal and vertical directions. Many of the numbers of course change over the lifetime of a collider; only the latest values are given here.

	SPEAR (SLAC)	DORIS (DESY)	CESR [CESR+ (phase2)] (Cornell)	PETRA (DESY)	PEP (SLAC)
Physics start date	1972	1973	1979 [1995]	1978	1980
Physics end date	1990	—	—	1986	1990
Maximum beam energy (GeV)	4	5.6	6	23.4	15
Luminosity (10^{30}cm^{-2}s^{-1})	10 at 3 GeV	33 at 5.3 GeV	290 at 5.3 GeV [600 in 1995]	24 at 17.5 GeV	60
Time between collisions (μs)	0.75	0.965	0.36 [0.028 in 1995]	3.8	2.44
Bunch length (cm)	$\sigma_z \approx 4$	$\sigma \sim 2$ at 5 GeV	1.7	$\sigma \sim 1.3$ at 17.5 GeV	$\sigma_z = 2$
Beam radius (10^{-6} m)	H: 700 V: 50	H: 740 V: ~ 30 at 5 GeV	H: 500 V: 11	H: 430 V: 13 at 17.5 GeV	H: 340 V: 14
β^*, amplitude function at interaction point (m)	H: 1.2 V: 0.08	H: 0.59/12.3 V: 0.04/0.79	H: 1.0 V: 0.018	H: 1.3 V: 0.08	H: 1.0 V: 0.05
Interaction regions	2	2	1	4	1