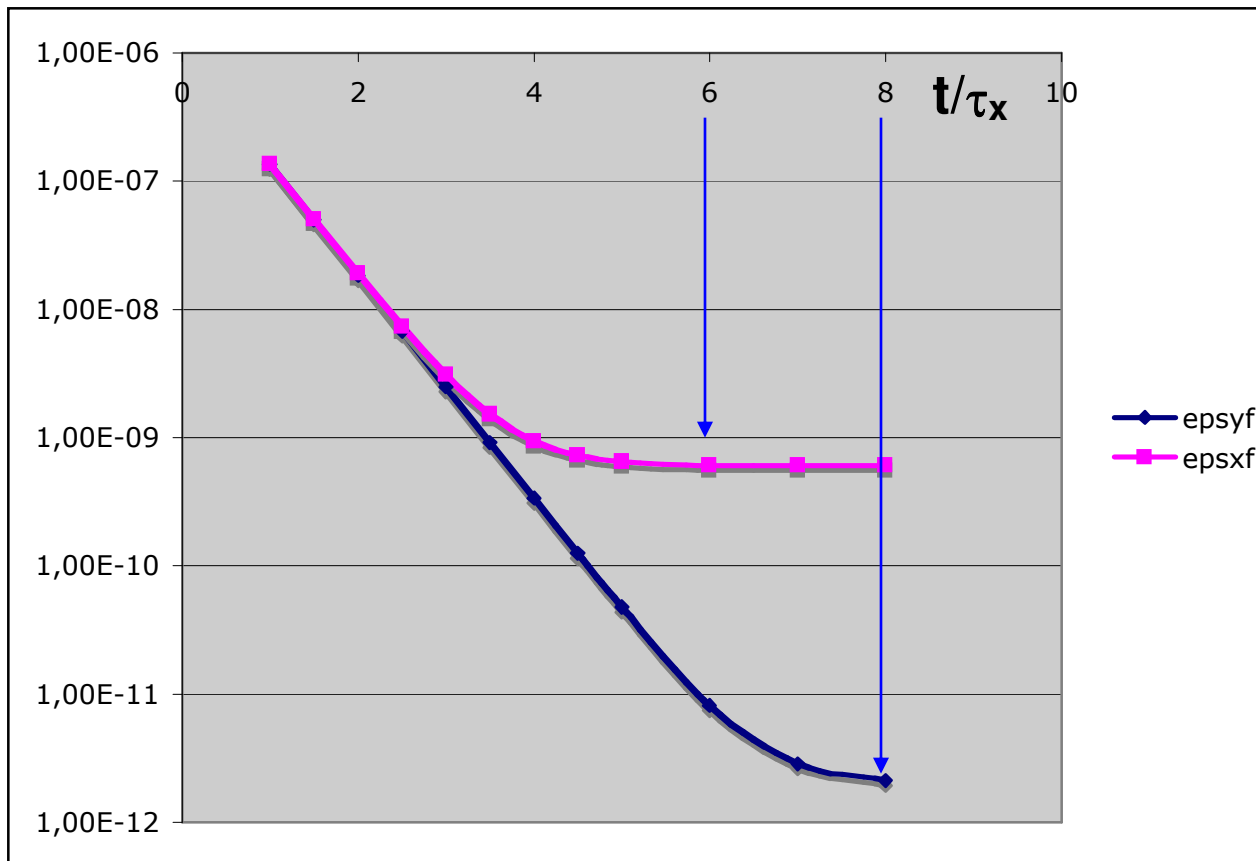


DR High Repetition Rate

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8 damping times are
needed for the vertical
emittance

$$5 \text{ Hz} \Rightarrow \tau_x = 26 \text{ ms}$$

$$10 \text{ Hz} \Rightarrow \tau_x = 13 \text{ ms}$$

	RDR	TILC08	SB2009	High Rep
Circumference (m)	6695	6476	3238	3238
Damping time τ_x (ms)	25.7	21	24	13
Emittance ϵ_x (nm)	0.51	0.48	0.53	0.57
Emittance ϵ_y (pm)	2	2	2	2
Energy loss/turn (MeV)	8.7	10.3	4.4	8.4
Energy spread	1.3×10^{-3}	1.3×10^{-3}	1.2×10^{-3}	1.5×10^{-3}
Bunch length (mm)	9	6	6	6
RF Voltage (MV)	24	21	7.5	13.4
Average current (A)	0.40	0.43	0.43	0.43
Beam Power (MW)	3.5	4.4	1.9	3.6
N. of RF cavities	18	16	8	16
B wiggler (T)	1.67	1.6	1.6	2.4
Wiggler period (m)	0.4	0.4	0.4	0.28
Wiggler length (m)	2.45	2.45	2.45	1.72
Total wiggler length (m)	200	216	78	75
Number of wigglers	80	88	32	44

Energy = 5 GeV

N. of RF cavities	8 \Rightarrow 16
Wiggler field	1.6 \Rightarrow 2.4 T
Wiggler period	0.4 \Rightarrow 0.28 m