Table 7.5: Comparison of beam parameters for TBL and CLIC

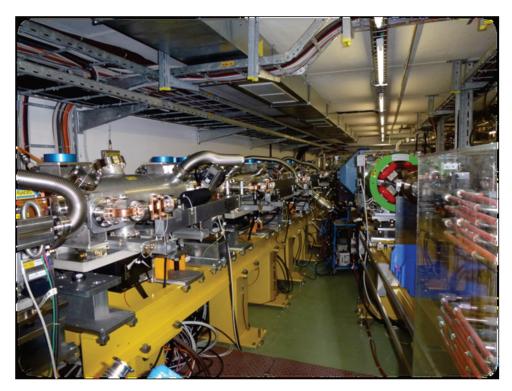| Parameter [units]	Symbol	TBL	CLIC
Number of PETS	N_{PETS}	16	1492
Length of PETS [m]	L_{PETS}	0.80	0.21
Initial average current [A]	I_0	28	101
Power per PETS [MW]	P	$\sim$138	135
Initial energy [MeV]	E_0	150	2400
Mean energy extracted [%]	η_{extr}	$\sim$54	84
PETS sync. freq. [GHz]	f_{rf}	12	12
Number of FODO cells	N_{FODO}	8	524
Length of FODO cells [m]	L_{FODO}	2.82	2.01
Pulse length [ns]	t_{pulse}	140	240
Transient length [ns]	t_{fill}	3	1
Bunch length r.m.s. [mm]	σ_z	1.0	1.0
Init. norm. emittance [μm]	ε_N (x,y)	150	150
Beampipe radius [mm]	a_0	11.5	11.5

Fig. 7.43: Photo of the TBL beam line equipped with PETS tanks in the CLEX hall

efficient and stable. Therefore measurements of the energy balance of the produced RF power and the energy loss of the beam will be carried out. The stability of the produced power will be determined both in amplitude and phase. The quadrupoles have been installed on moving tables developed by CIEMAT [45] which allows positioning in the micrometer range. Beam based alignment studies are foreseen using the precision BPM's developed by IFIC Valencia and UPC Barcelona [46].

The beam line has been installed together with nine PETS tanks constructed by CIEMAT [47]