

Table 1: Table of parameters for the simulation.

Parameter	Symbol	Value	Units
Protons in Drive Bunch	N_P	10^{11}	TeV
Proton energy	E_P	1	
Initial Proton momentum spread	σ_p/p	0.1	
Initial Proton longitudinal spread	σ_Z	100	
Initial Proton bunch angular spread	σ_θ	0.03	
Initial Proton bunch transverse size	$\sigma_{X,Y}$	0.4	
Electrons injected in witness bunch	N_e	$1.5 \cdot 10^{10}$	GeV
Energy of electrons in witness bunch	E_e	10	
free electron density	n_p	$6 \cdot 10^{14}$	cm^{-3}
Plasma wavelength	λ_p	1.35	mm
Magnetic field gradient		1000	T/m
Magnet length		0.7	m