

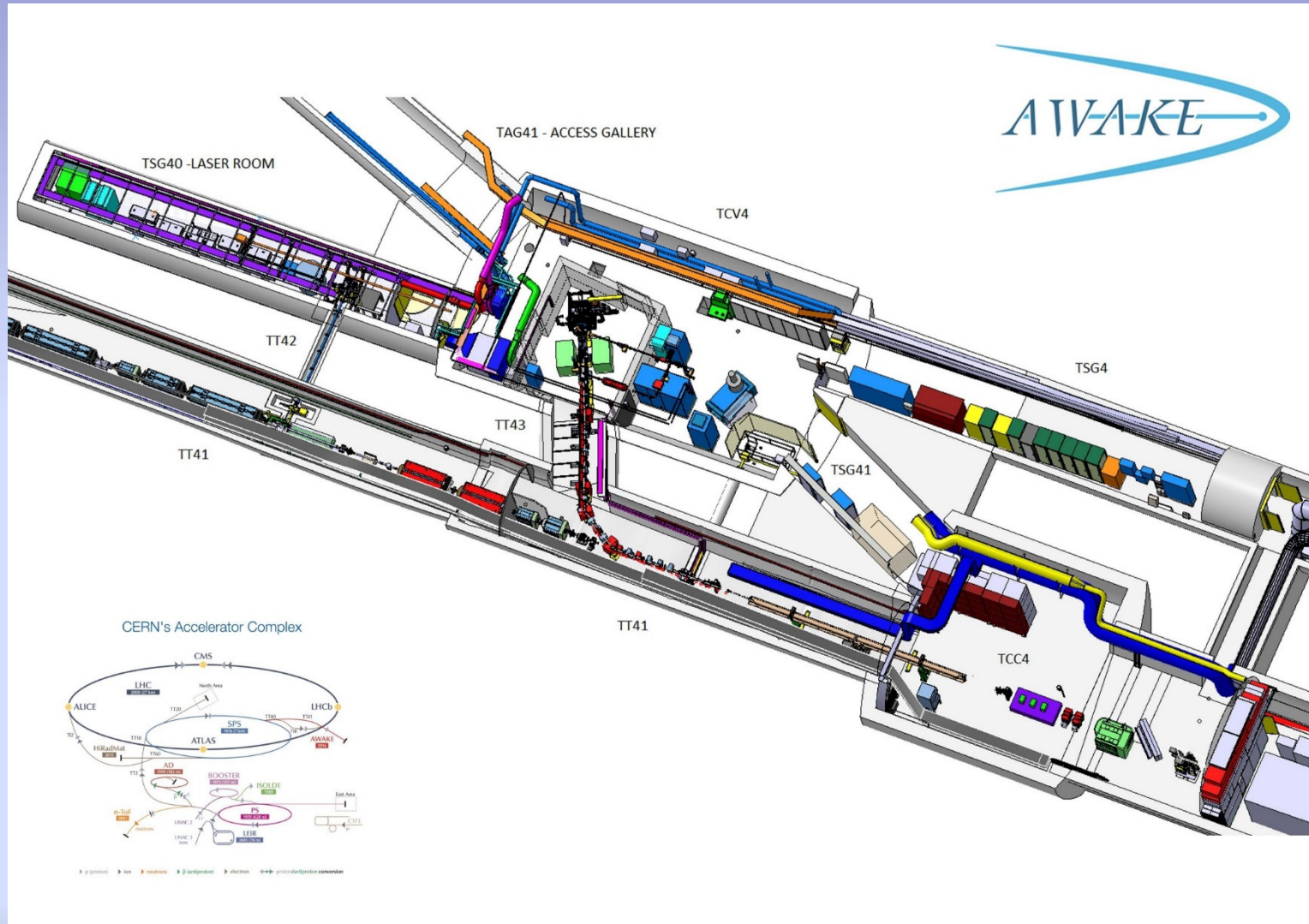


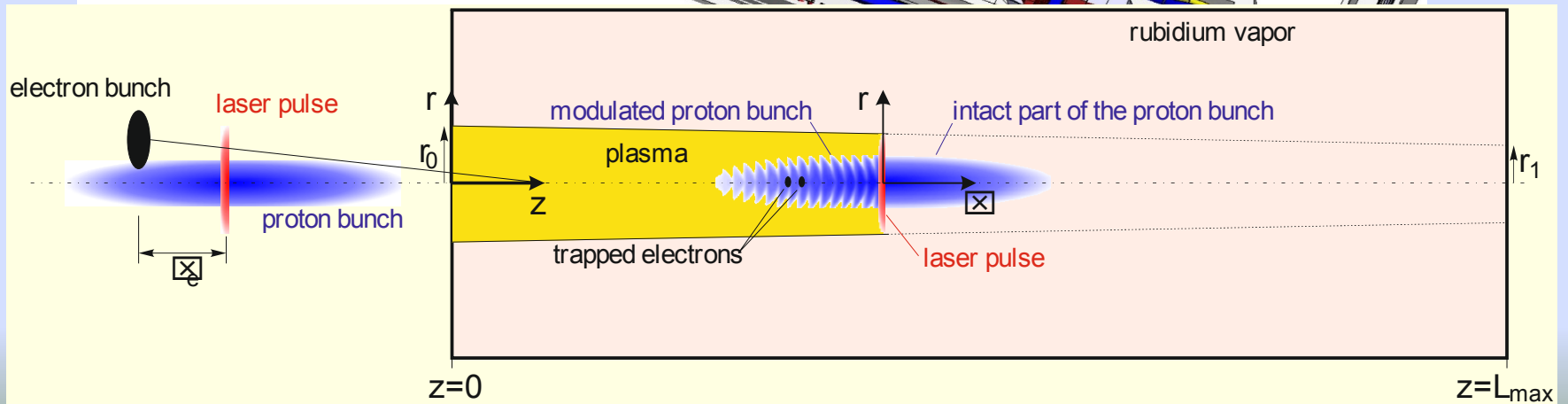
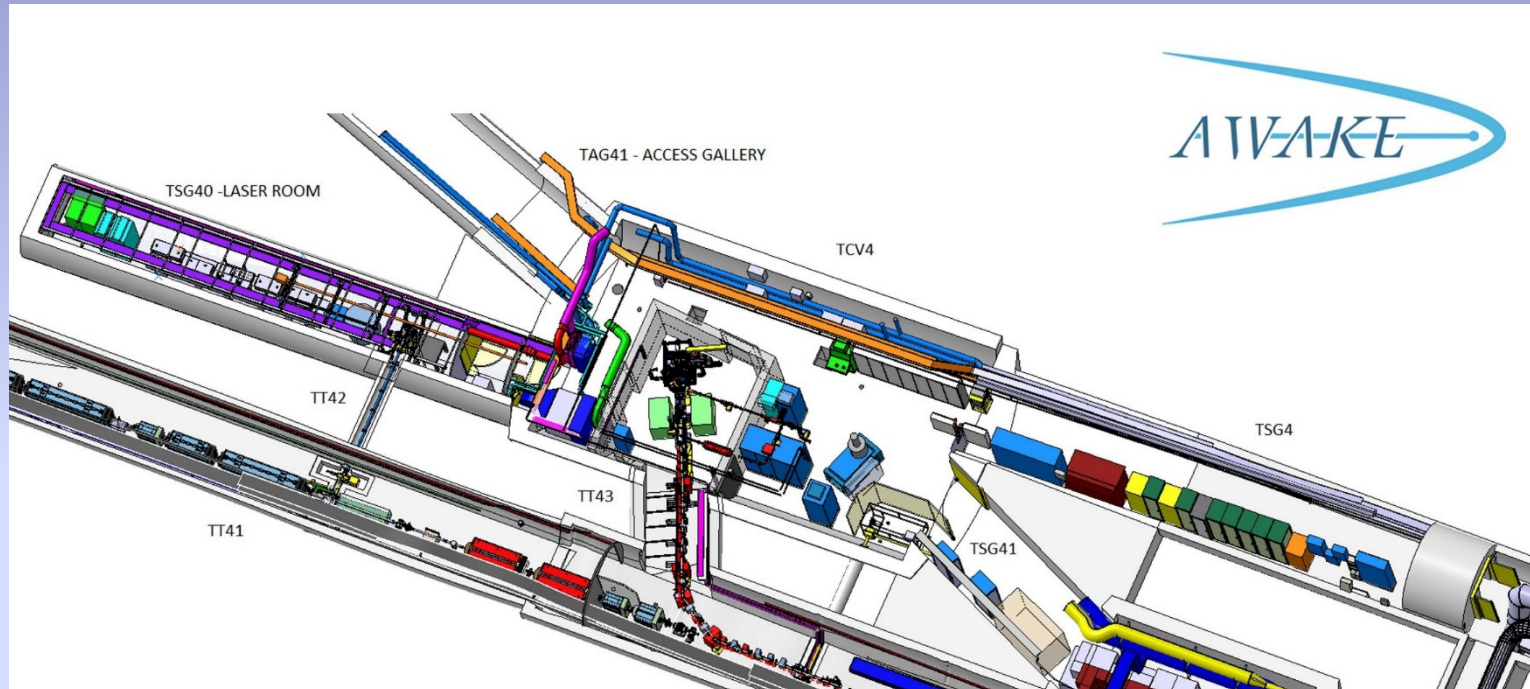
Ultra short bunch electron injector for AWAKE

Poster: THPLR071



AWAKE layout





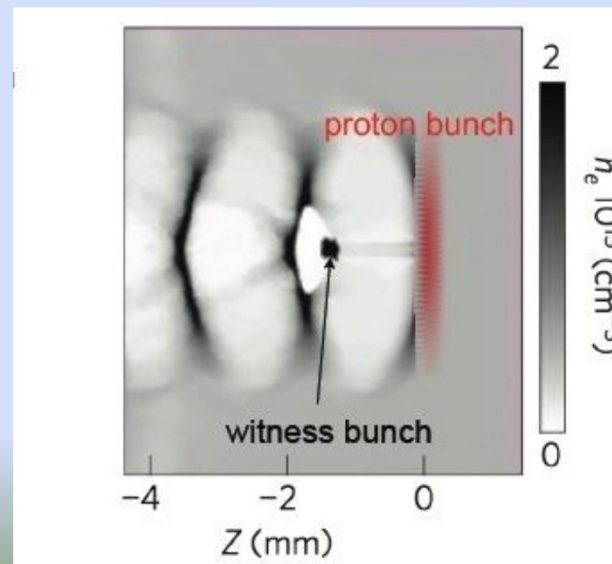


Awake electron beam requirements for Run II



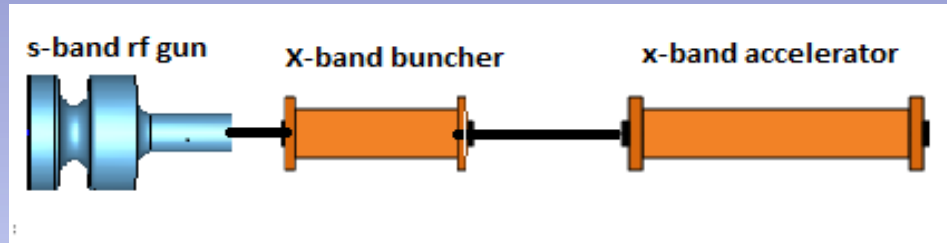
Parameter	Baseline	Run II
Beam Energy	16 MeV	>50 MeV
Energy spread (σ)	0.5 %	< 1 %
Bunch Length (σ)	4 ps	0.1 ps
Beam Focus Size (σ)	250 μm	0.25 – 1mm
Normalized Emittance (rms)	2 mm mrad	< 10 mm mrad
Bunch Charge	0.2 nC	0.1 – 0.2 nC

Plasma wave length
1.2 mm

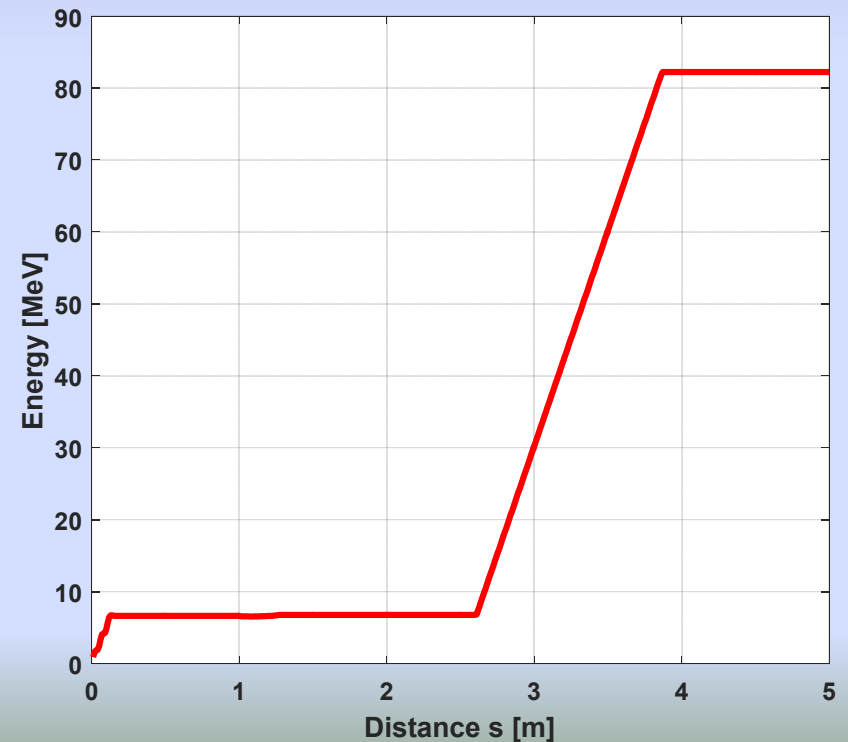
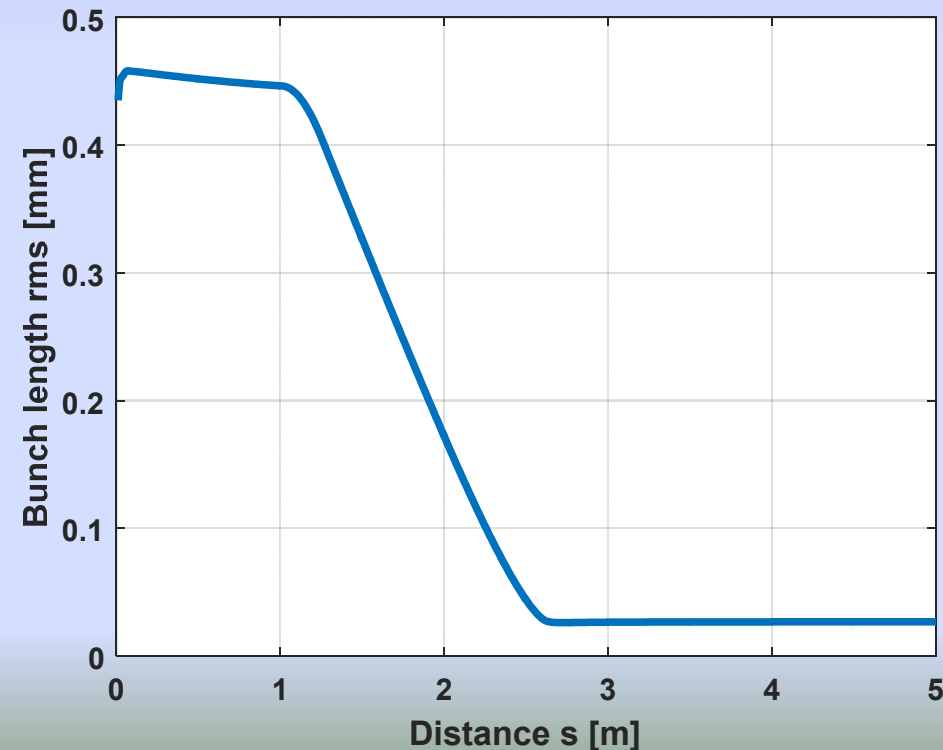




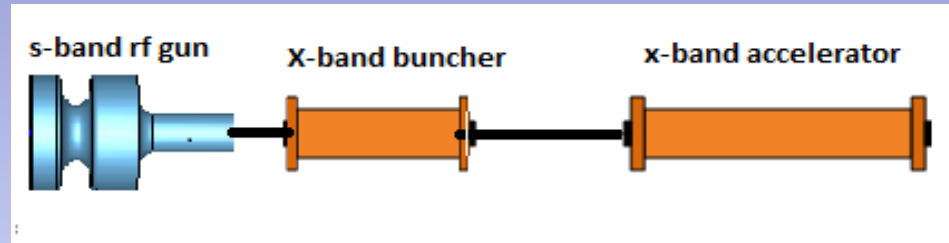
Injector simulations



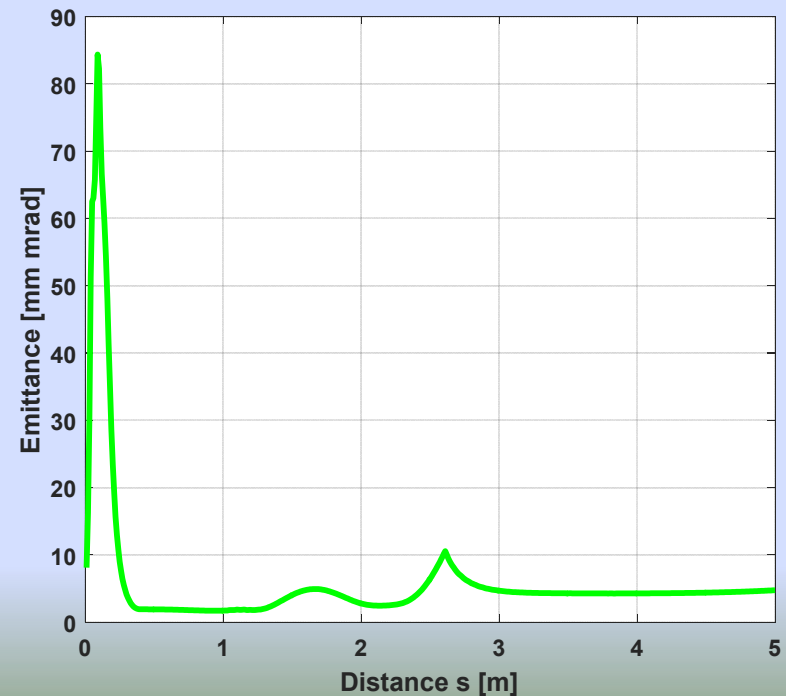
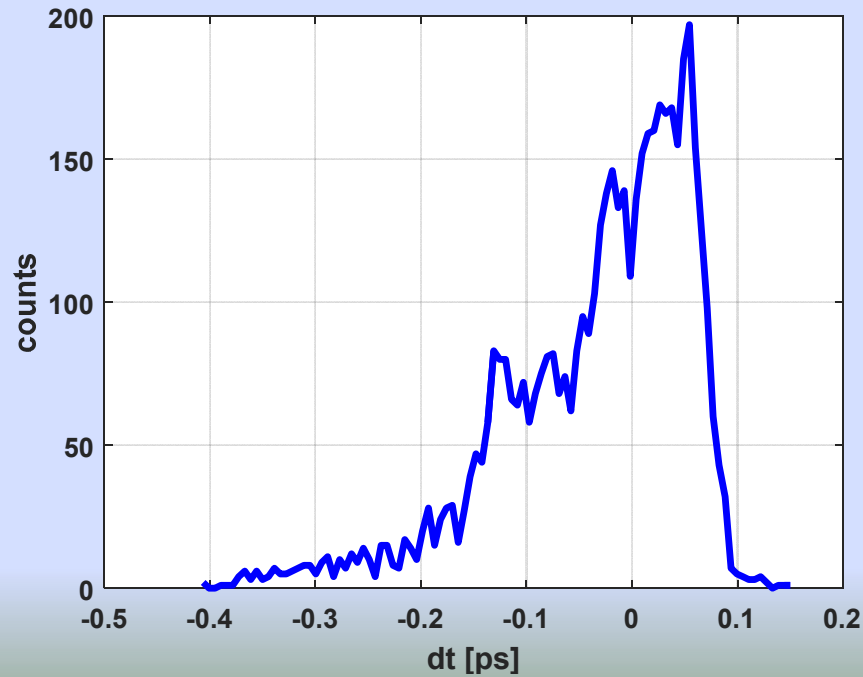
S-band gun + 12GHz bunching structure, 2ps input,
22 MV/m buncher, 80 MV/m x-band accelerator to keep bunching



Injector simulations



Emittance: $5 \mu\text{m}$, Bunch length: $27 \mu\text{m} = 90 \text{ fs}$, Charge: 100 pC





End

Please come to the poster
for more details and
questions !

Electron source layout

