Contribution of Ankara University Accelerator Technology Institute

Avni AKSOY

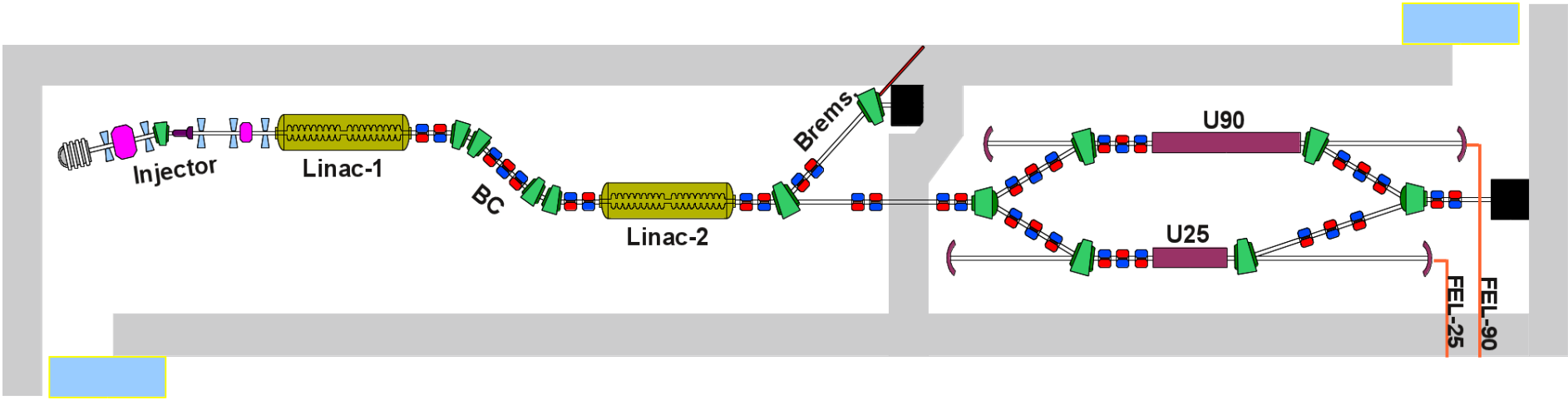
behalf of

Ömer YAVAŞ

A.U. Accelerator Technology Institute

http://hte.ankara.edu.tr

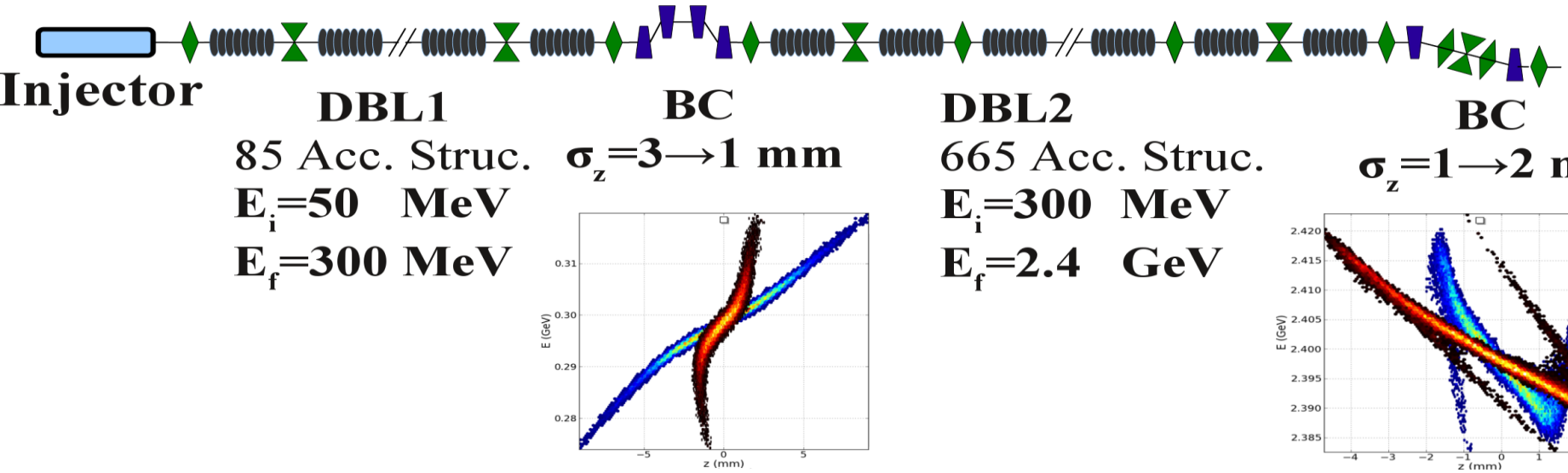
- Institute has been established in Ankara University in 2010 basically following aims
  - Education on accelerator physics and related tasks
  - Building Oscillator Mode Free Electron Laser Facility
    - 300 keV thermionic DC injector
    - Two superconducting RF accelerating module in order to achieve 40 MeV electron beam
    - Two planar undulator with 25 mm and 90 mm period length in order to produce FEL 2-250 micron range



Our contribution

Main contacts:	Prof. Dr. Ömer Yavaş (AU)
Activity/work package/task:	Parameters and Design /Drive Beam Complex/ Optics design, Integrated studies
Technical subject:	Improve drive beam accelerator optics Bunch compressor design Improve injector/interact with CLIC0 injector
Working arrangement:	Independent group working in Ankara University, PhD students at CERN, frequent visits and common workshops
Proposed manpower	AU: 2 PhD, 2 Dr , 1 Prof SDU: 1 PhD, 1 Prof UU: 1 PhD, 1 Prof

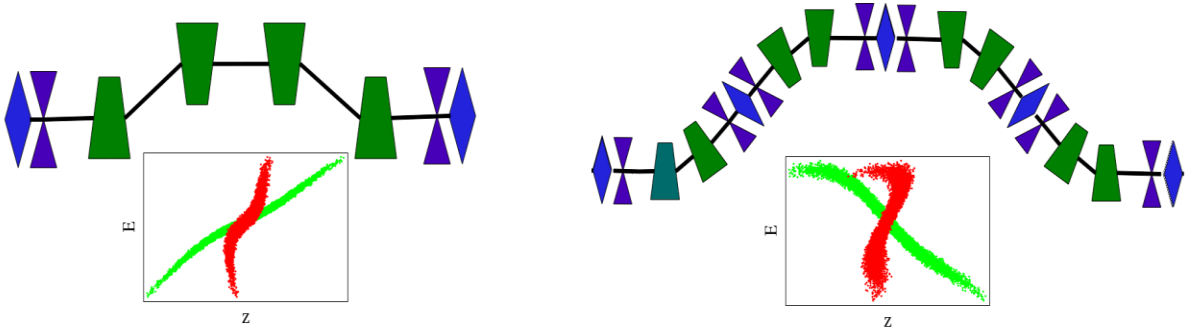
Drive Beam Optics



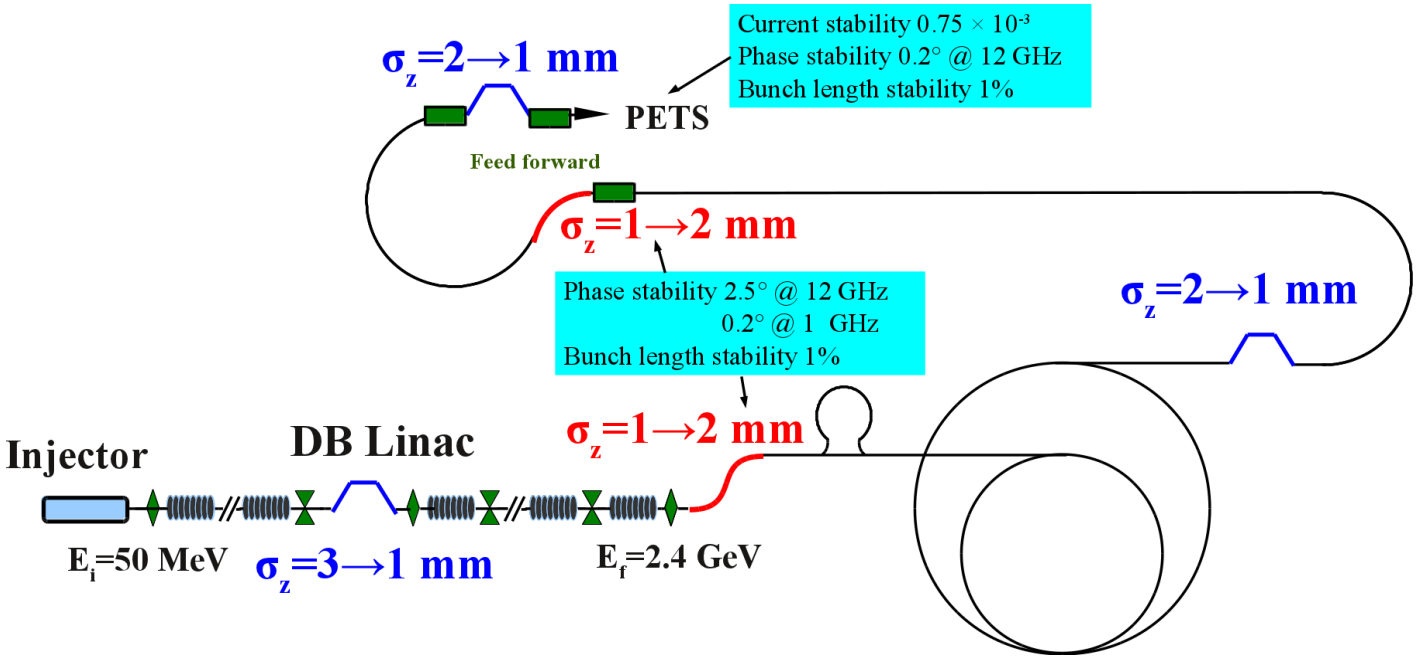
- Drive Beam linac beam dynamics studies has been done in previous contribution

- Beam loading, high order modes, imperfections in bunch compressor sections, real distribution from injector…. has to be taken into account

Bunch Compressors



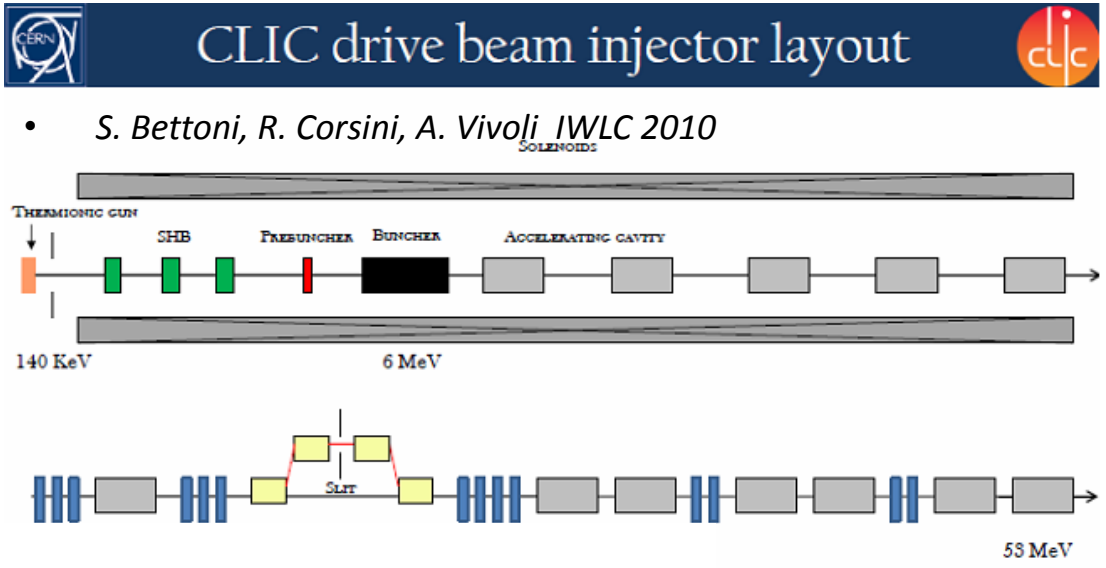
- Preliminary design for bunch compressors/decompressor for DBL has been done in previous contribution… Needs to be improved…
- Drive Beam needs many bunch compressors/decompressor…

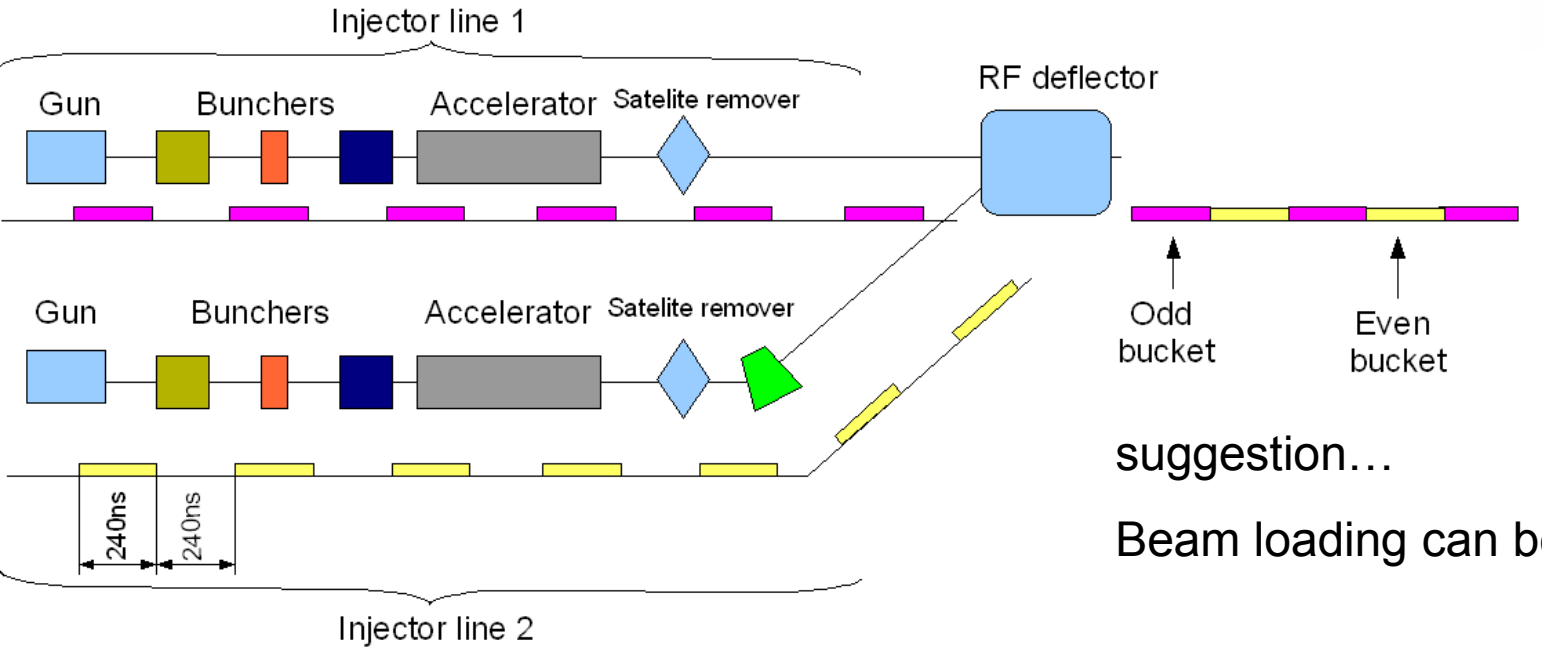


Drive Beam Injector

Preliminary design has been done by Simona Bettoni

Current design will be improved..





suggestion…

Beam loading can be problem…

Conclusions

- ATI has collaboration with many other universities… two of that universities wants to contribute in CLIC over ATI (Suleyman Demirel Uni., Uludag Uni)
- Contribution from UU was mentioned by Kenan Çiftçi (Beam-beam background and Synchrotron radiation background)…
- Working agreement expires by 2012.. We would like to renew it between ATI and CERN
- Application for financial support for future will be done to Turkish Atomic Energy Agency in January 2012
- Currently we have support until end of 2011, Possible extension end to 2012
- Depending on the budged we receive we plan to increase students.. Especially for
  - Diagnostic
  - RF and Structure design
  - Control…