

Table of Contents

1 Summary

- 1.1 FEL Project goals and CDR objectives
- 1.2 FEL design
 - 1.2.1 Technical Highlights
 - 1.2.2 The injector
 - 1.2.3 The accelerator
 - 1.2.4 The FEL's
 - 1.2.5 Key parameters
- 1.3 X-FEL project Schedule
- 1.4 Scientific case

2. Design and parameter choice

- 2.1 Design parameters
- 2.2 Simulation tools
- 2.3 Accelerator Simulations
 - 2.3.1 Gun and injector
 - 2.3.2 Linac layout
- 2.4. Undulator lines and simulations

3. Electron beam line components

- 3.1 RF Systems
 - 3.1.1 RF system for gun
 - 3.1.2 RF systems for injector
 - 3.1.3 RF systems for linac
 - 3.1.4 Power systems
- 3.2 Magnets
- 3.3 Electron beam Diagnostic
- 3.4 Vacuum
- 3.5 Mechanical support systems
- 3.6 Control Systems

4 Test Stands

- 4.1 Gun test stand
- 4.2 RF test stand
- 4.3 Power combination & compression
- 4.4 Klystron modulator.

5 TDR plan

Time schedule, budget, human sources, infrastructure requirements...