

Two-beam Module Review – 15/16.09.2009  
Conclusions and future actions

All

# Module design baseline

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- ▶ Accelerating structure: CLIC G (100 MV/m,  $L = 230$  mm, aperture  $\sim 5$  mm) [fabrication: superstructures x2, D 140 mm, sealed disks]
- ▶ IWFM per accelerating structure
- ▶ PETS: CLIC note 764 (6.5 MV/m,  $L=310$  mm, aperture 23 mm) [octants, minitank]
- ▶ 1 PETS powering 2 accelerating structures
  
- ▶ Beam inter-axis: 650 mm
- ▶ Beam height: same height for the two beams
  
- ▶ Accelerating structures and PETS + DB Q on girders (same girder based on MB girder design)
- ▶ Snake-system  
Girder end supports: cradles mechanically attached to a girder and linked to the adjacent one (DB: 100 A, MB: minimization of wakefields, validation at 30 GHz in CTF2)
- ▶ Linear actuators → alternative to be investigated (see next slide)
- ▶ Separate girders for main and drive beam (possibility to align DB quadrupole separate from accelerating structures) → alternative to be investigated (see next slide)

# Alignment/supporting

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## 1. Separate girder

1. Linear actuator
2. CAM systems

Helene proposal:  
- 1.1 baseline  
- 1.2 alternative

Girder must be compatible with both mover solutions

## 2. Mono girder

1. Linear actuator (*excluded due to load?*)
  2. CAM systems
- separate alignment for DB Q would help
- MBQ separate

**Action: organize a discussion with few experts in order to compare separate and mono-girder solutions and make a decision (W41).**

# Module design baseline

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- ▶ Separate support for MB Q and its BPM (girder interrupted at the MB Q)
- ▶ MB Q and BPM rigidly mechanically connected
- ▶ Common actuators/devices for stabilization and beam-based feedback systems → alternative to be investigate (Hermann proposal: decoupling functions / add I short corrector at each MBQ)

**Action: design corrector compatible with MBQ, module integration and vacuum - organize a discussion with few experts and make a decision (W43).**

# Module integration

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- ▶ **Missing even in terms of space reservations**
  - ▶ Geophones
  - ▶ Valves
  - ▶ RF instrumentation
  - ▶ Instrumentation racks

# Tunnel integration

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- ▶ **Ventilation**

- ▶ lower power dissipation by at least a factor 2

- ▶ **Cooling**

- ▶ pipe location?
  - ▶ Delta P?

Lake cooling option and one inlet/outlet access point seem not be realistic → Change scenario

*Needed thermo-mechanical calculation of the module covering of the operation modes (possibility: thermal shielding of modules + water-cooled cable trays)*

- ▶ **Tunnel diameter 4.5?**

- ▶ **Power convertor location?**