

# Displacement of the CNPA

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Réunion Diagnostiques 2 novembre 2006



CENTRE DE RECHERCHES EN  
PHYSIQUE DES PLASMAS



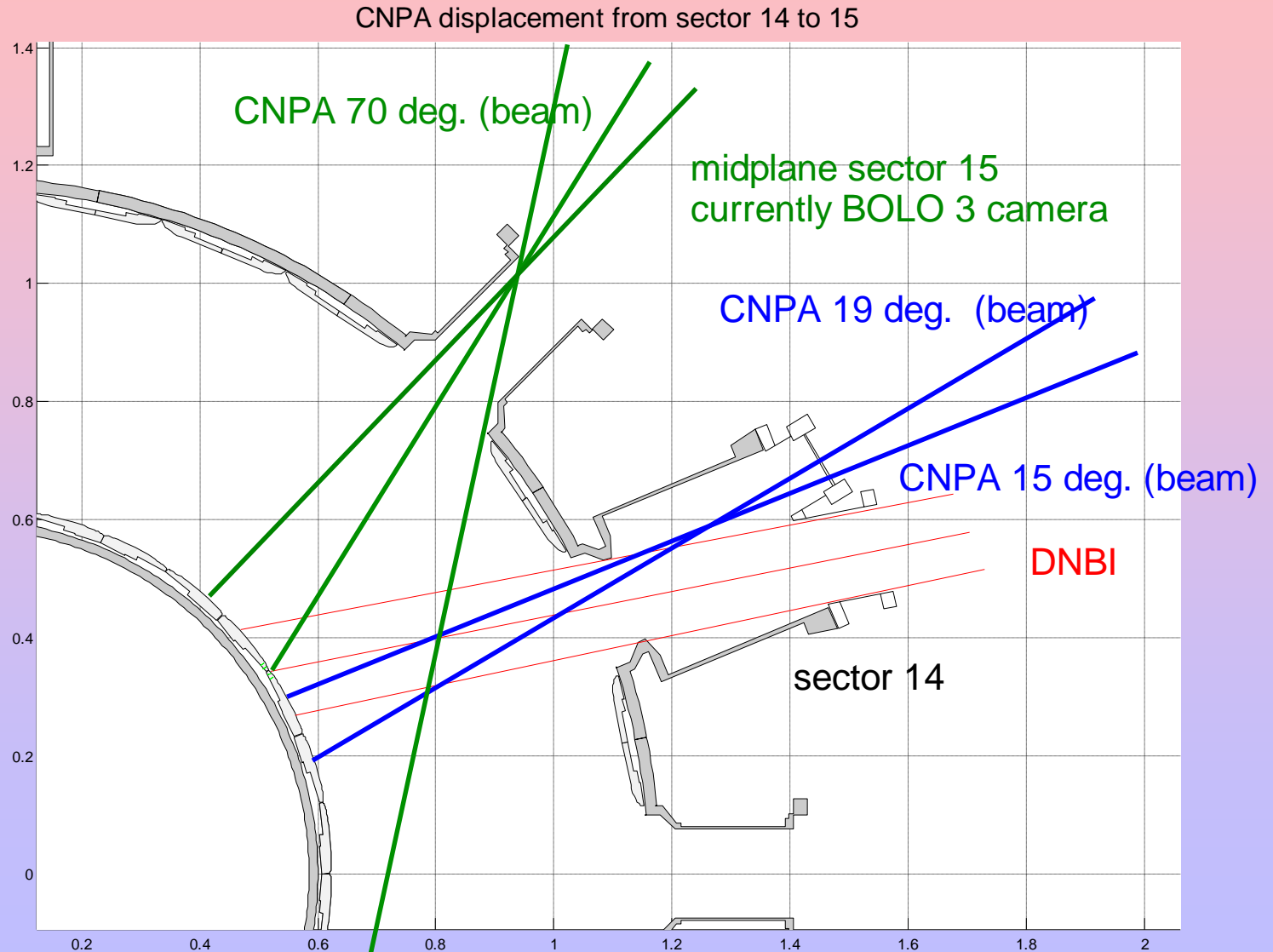
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# Status und plans

- 2004-now:
  - CNPA sits in sector 14, together with DNBI
  - Measures neutral fluxes  $\perp$  to toroidal B-field
  - Determination of  $f_{i\perp}$ ,  $n_{i\perp}$ ,  $T_{i\perp}$
  - No assessment of  $\parallel$  properties of fast ions
  - Intersection of beam by  $\phi=15..19^\circ$
  - No local determination of Ti with active CX
- Shutdown 2007 (i.e. before end of my PhD):
  - Put CNPA in sector 15, replacing BOLO 3
  - Rotatable support for  $\perp + \parallel$  measurements
  - $30^\circ$  in respect to B-field,  $70^\circ$  to beam
  - Active CX for local Ti in the centre



# Top view



# Needed work

- New support permitting to turn CNPA toroidally, from shot-to-shot, to be manufactured by CRPP
- New flange interfacing with TCV, permitting rotation, solutions ?
- Cables, assembled by CRPP
- cost of support  $\leq$  5000 CHF (RC)
- **No new electronics or vacuum equipment necessary**

# Future of TCV

- Direct heating of ions will possibly require a second CNPA for simultaneous  $\perp + \parallel$  measurements, the new support will become handy...
- New device currently 75 k€ on IOFFE price list (Maxim Mironov, IOFFE)
- Total cost of current CNPA was 120 k€ in 2004 (AK)