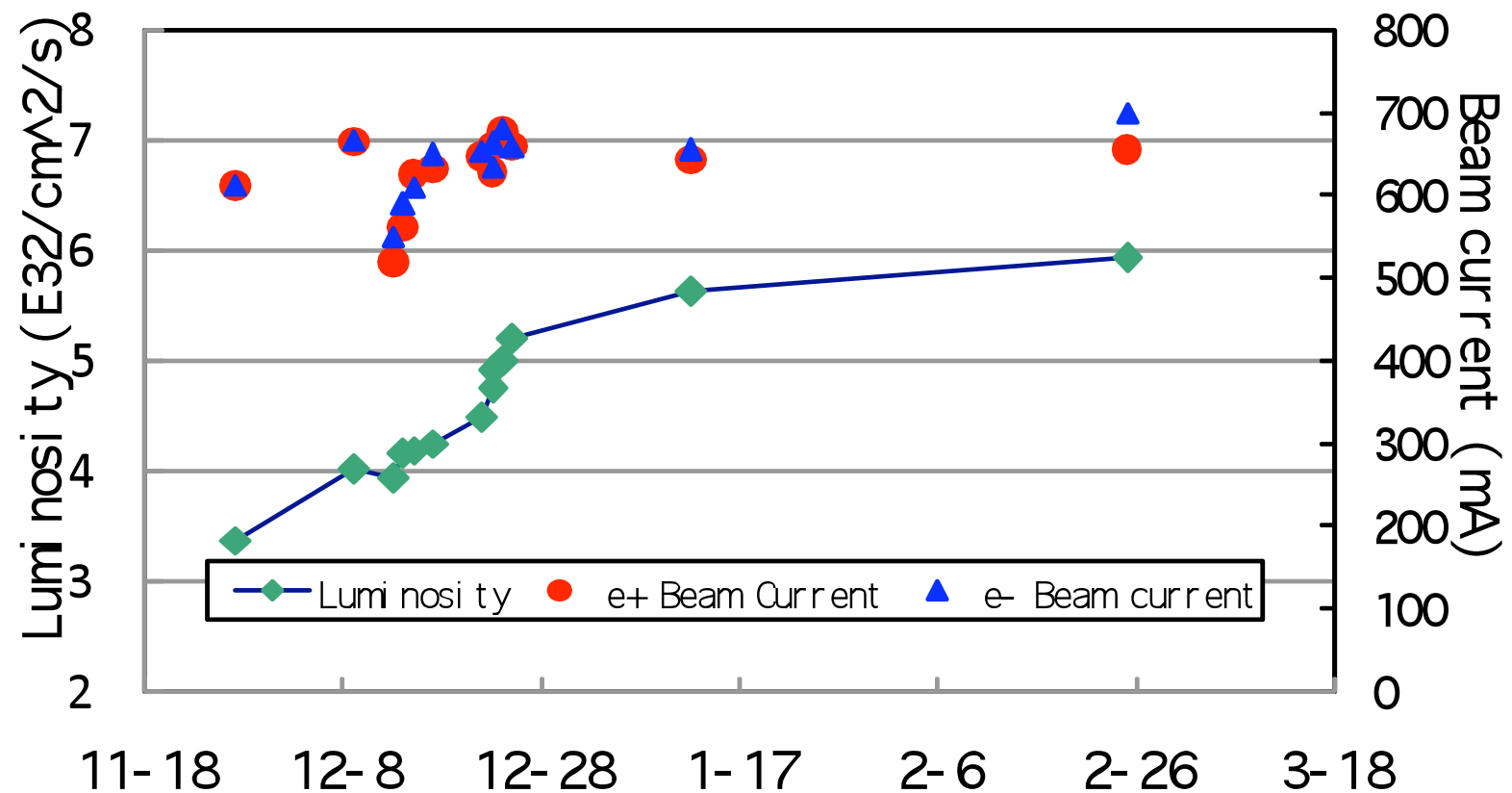


Status of BESIII and ZDD

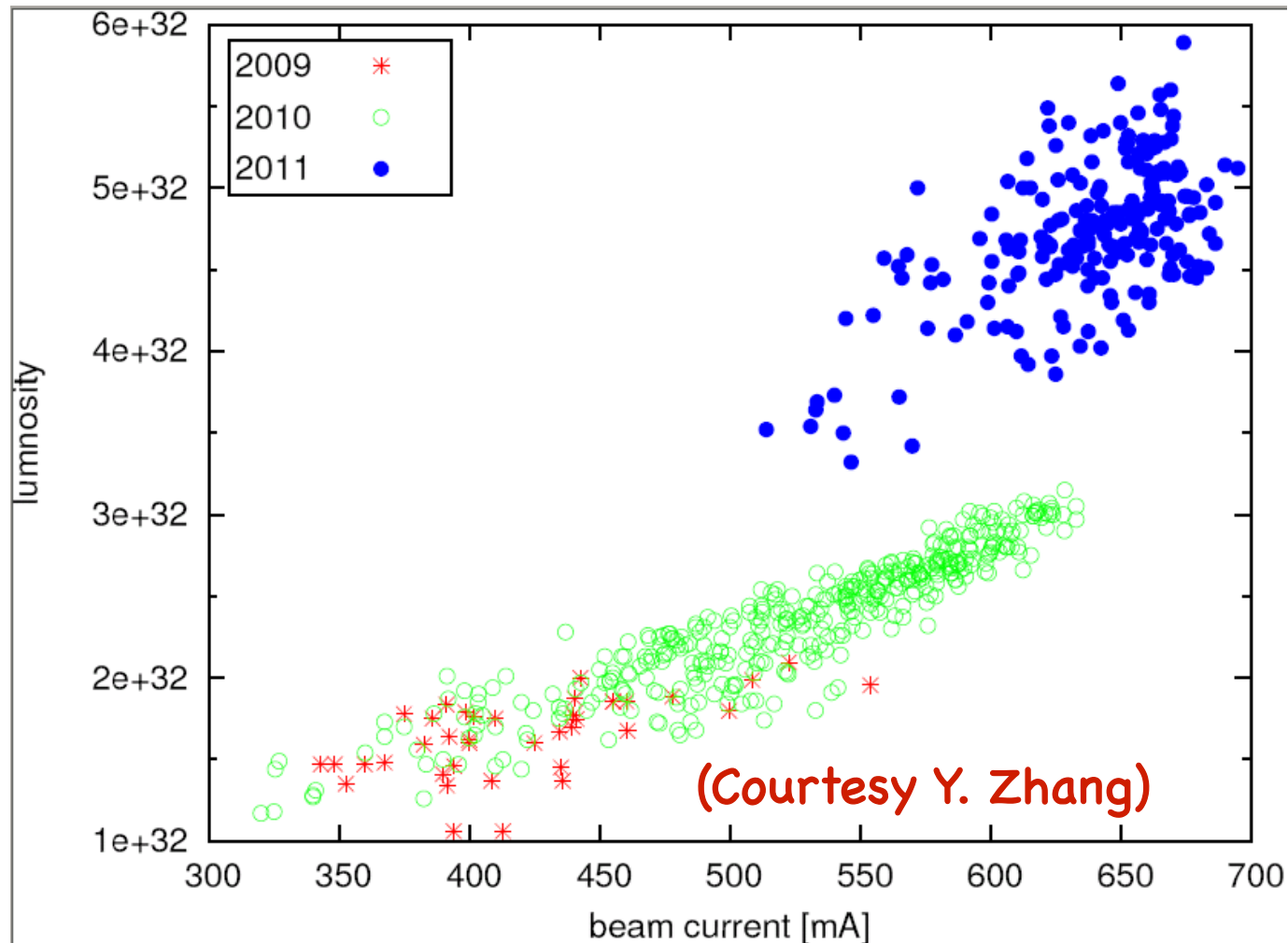
referee meeting, 23marzo 2011

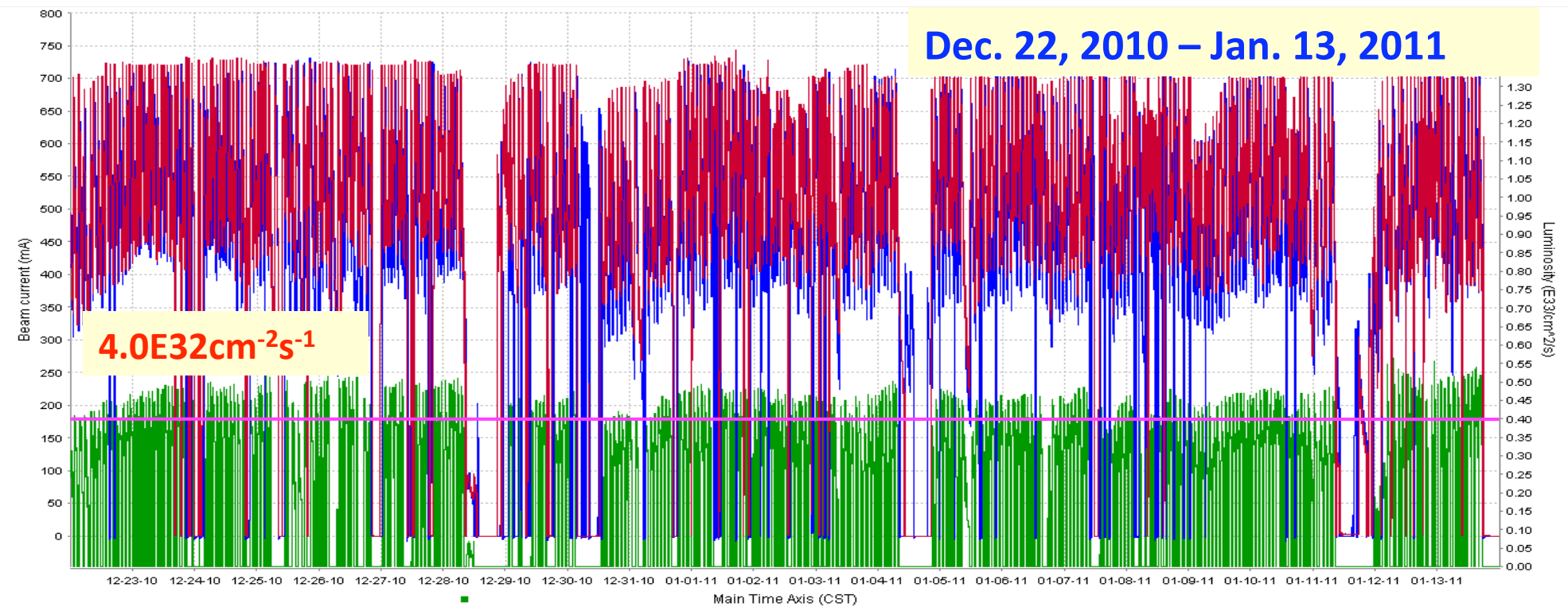
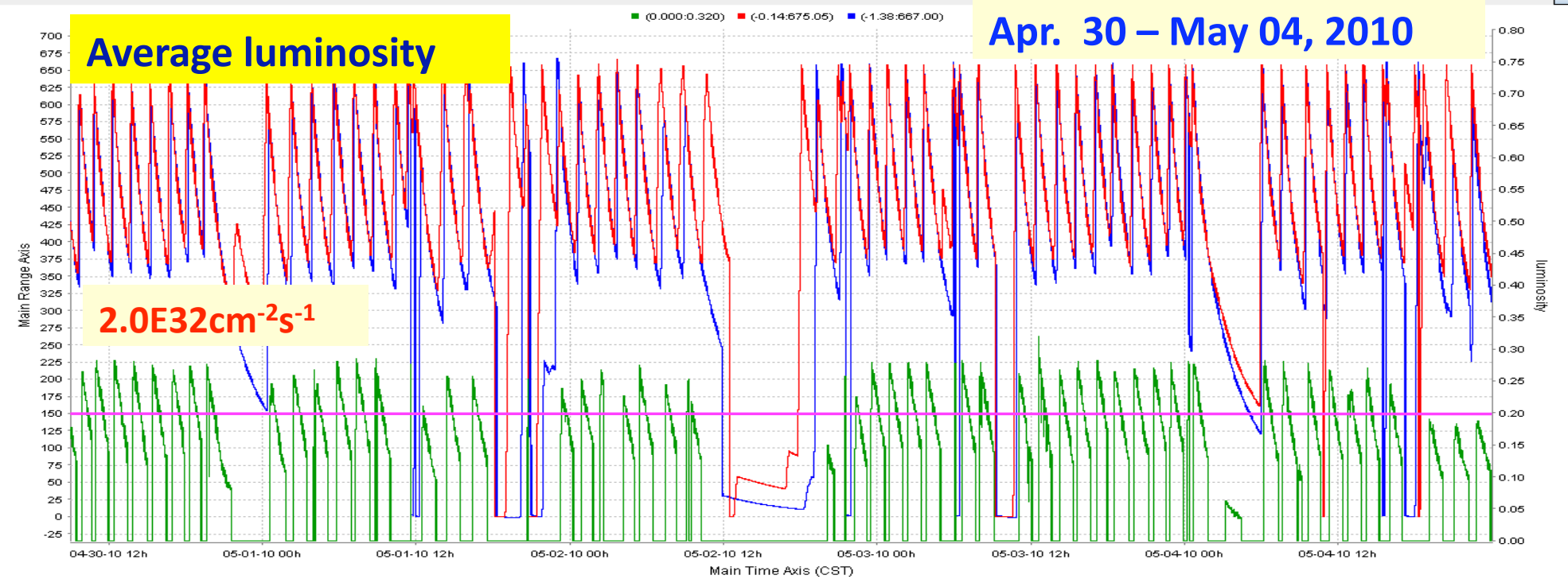
- BEPCII Luminosity enhancement during 2010-2011 data taking

- Luminosity record: $5.94 \times 10^{32} \text{cm}^{-2}\text{s}^{-1} @ 656 * 700 \text{mA}$



- BEPCII Luminosity: Comparison with last two years





- nov 2010 – may 2011 data taking

Operation schedule of BEPC-II

- up to now: 1.5 fb⁻¹ of $\psi(3770)$
- Mar. 2011 – May 2011: finish 2.0 fb⁻¹ of $\psi(3770)$ before another run for SR users
- 2-week machine study for higher luminosity in this month
- May 2011 – the end of May: 500pb⁻¹ $\psi(4040)$
- End of May 2011 – possible Tau mass scan (~1.5 weeks)
- June 1 – July 15: dedicated SR running for users
- July 15–30 September: machine shutdown

- Possible luminosity before the end of this run

- At $\psi(3770)$ energy

- ✓ The peak luminosity could be $\sim 6 \times 10^{32} \text{cm}^{-2}\text{s}^{-1}$
Possible average lum --- $\sim 4.5 \times 10^{32} \text{cm}^{-2}\text{s}^{-1}$

- At $\psi(4040)$ energy

- ✓ The peak luminosity could be $\sim 6.2 - 6.5 \times 10^{32} \text{cm}^{-2}\text{s}^{-1}$

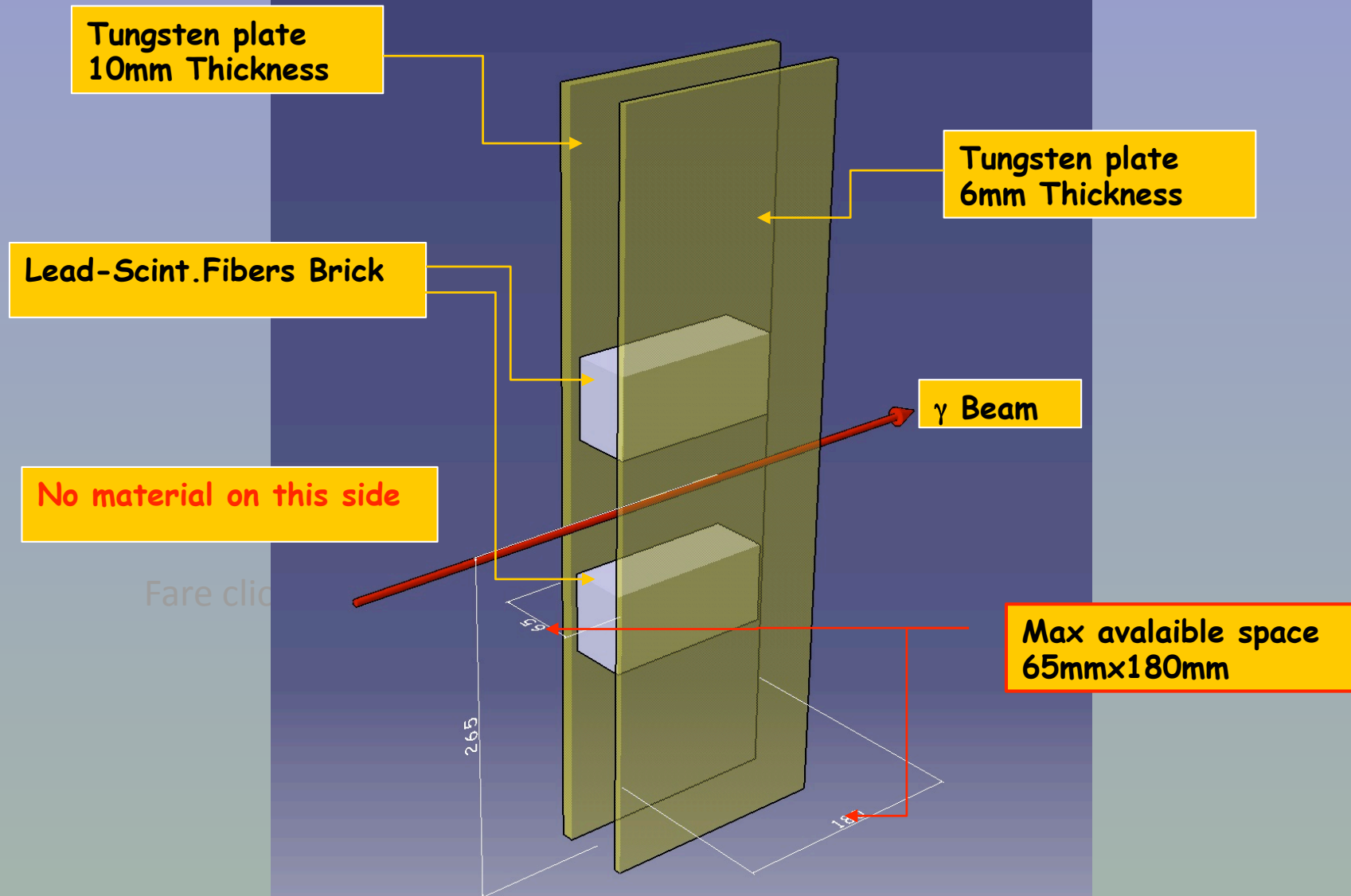
- Ways to enhance luminosity in the near future

- ✓ Higher bunch current and beam current
- ✓ Smaller vertical beta function at the IP
- ✓ More bunches for collision (shorter bunch spacing)

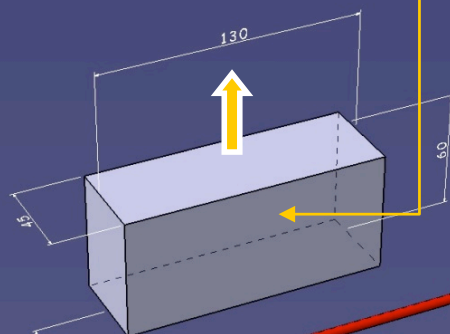
Commissioning time is needed!

ZDD status

ZDD: progetto [D. Orecchini]



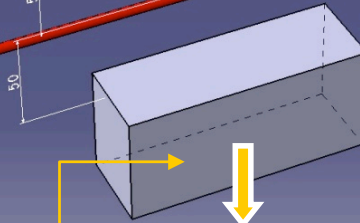
Lead-Fibers Brick



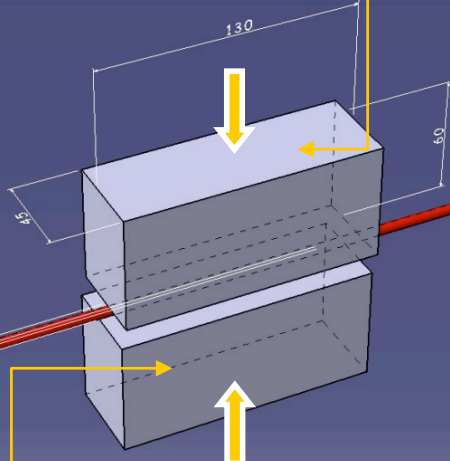
The opposite faces of the two bricks must lift:

- a) - Up, to 45mm from the beam;
- b) - Down, to 5mm from the beam.

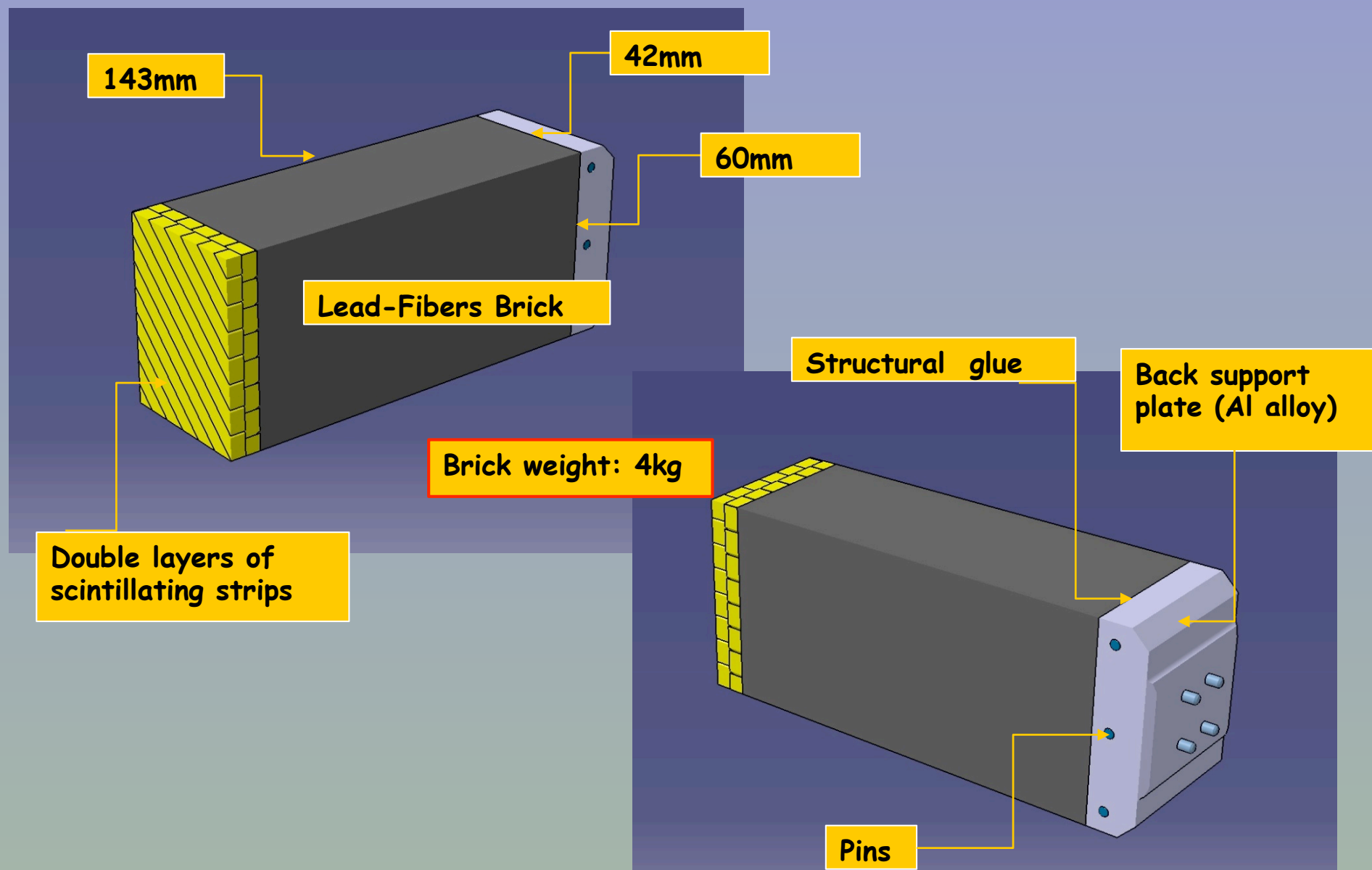
Lead-Fibers Brick

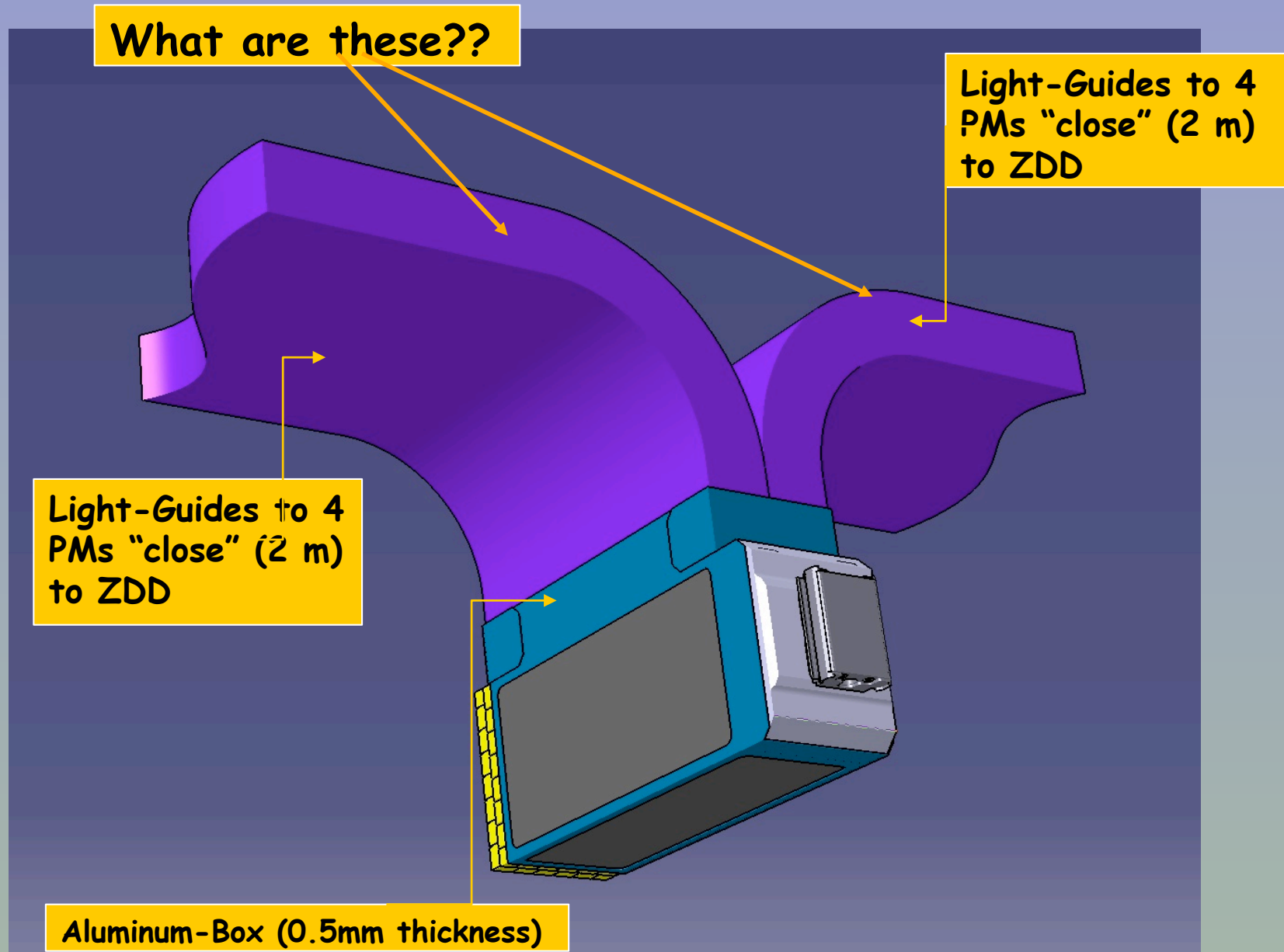


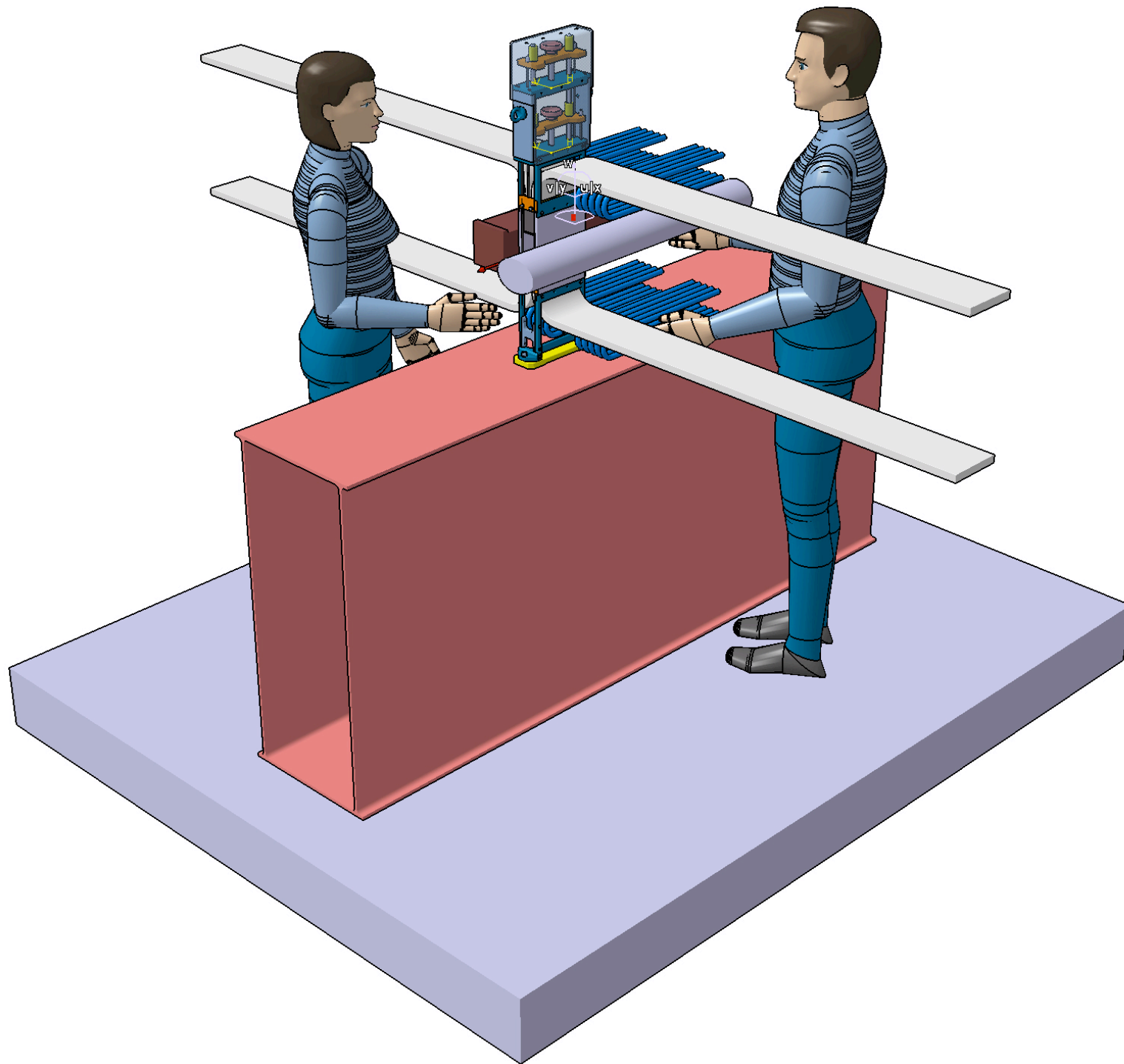
Lead-Fibers Brick

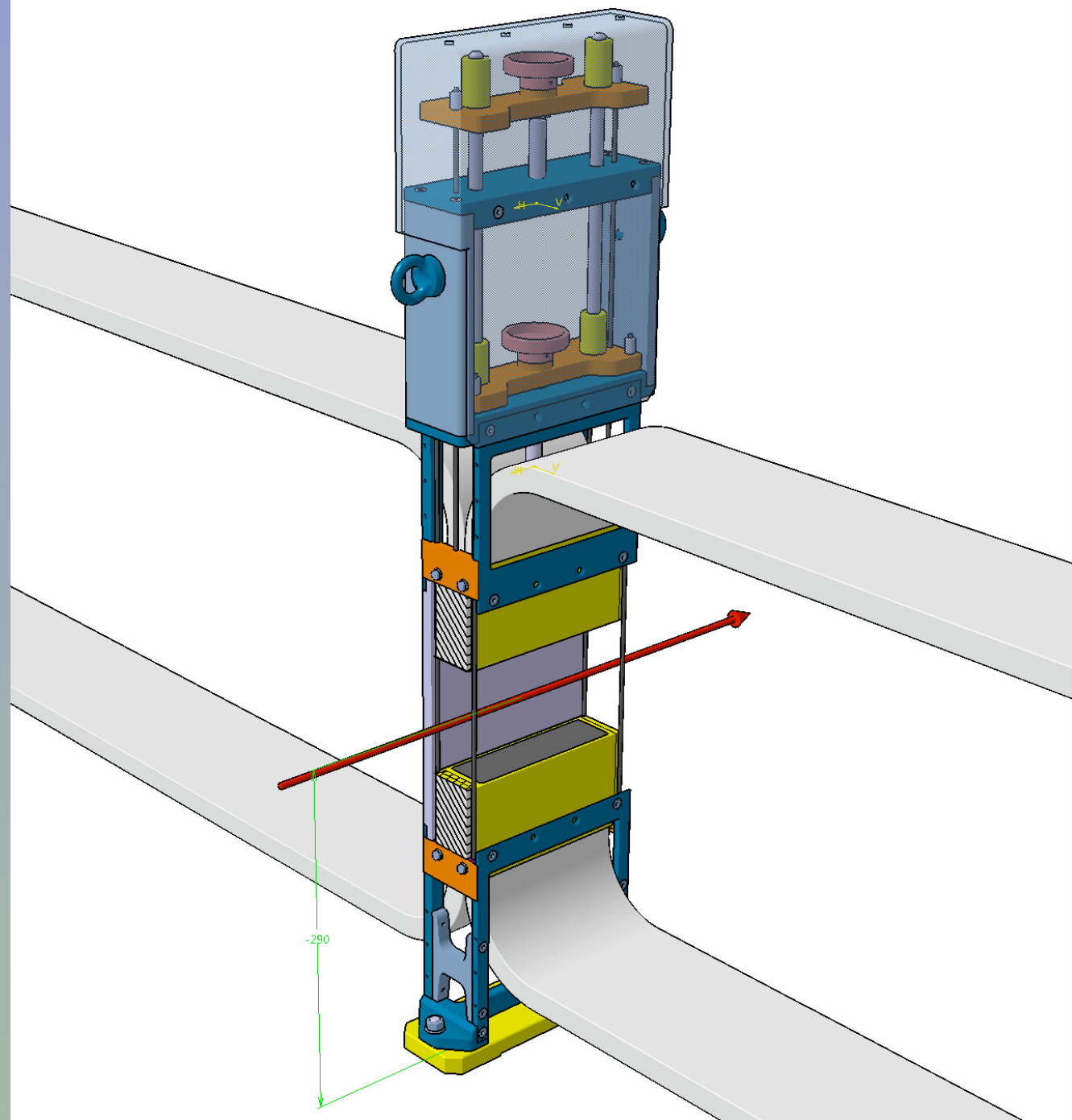


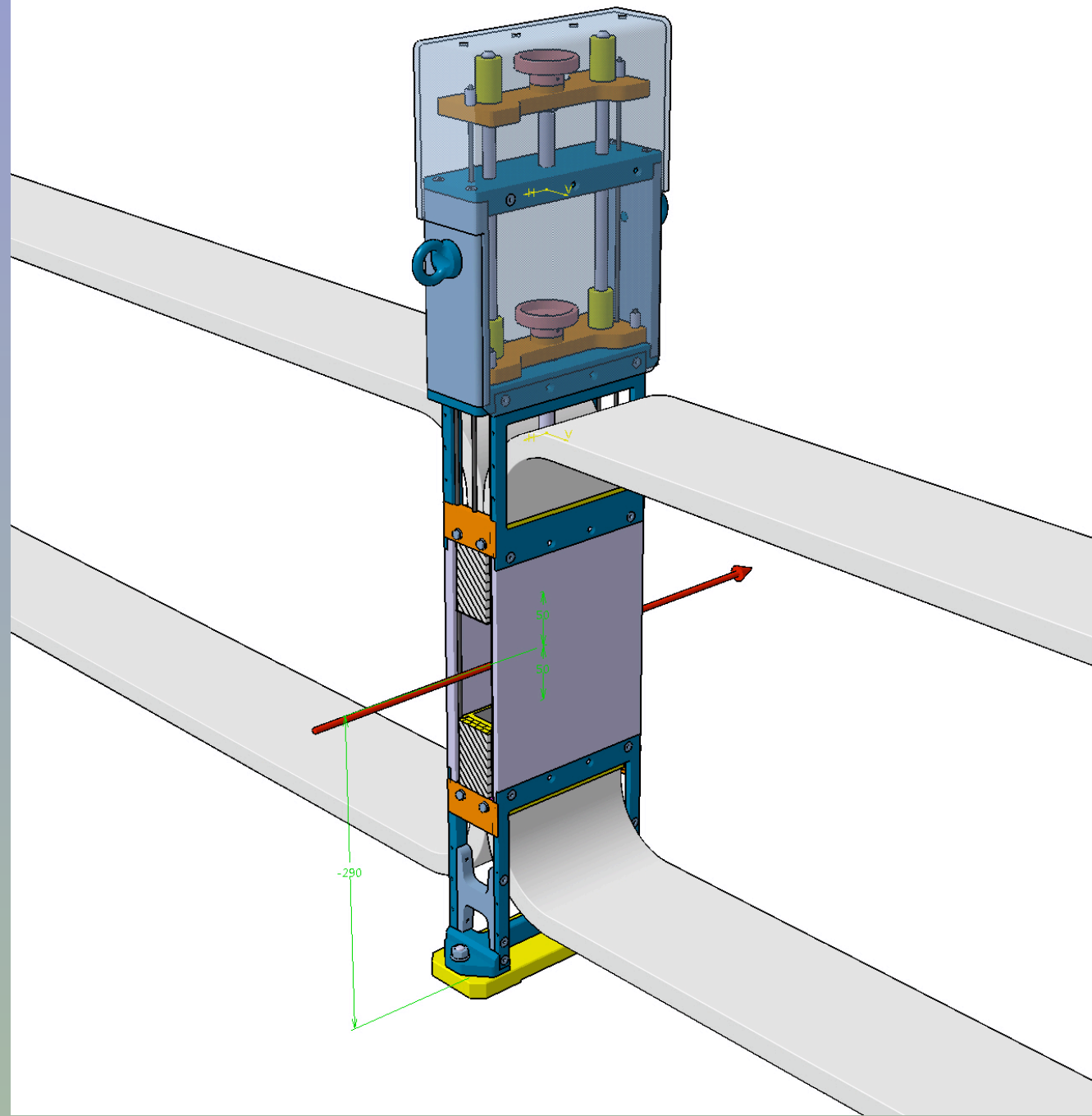
Lead-Fibers Brick

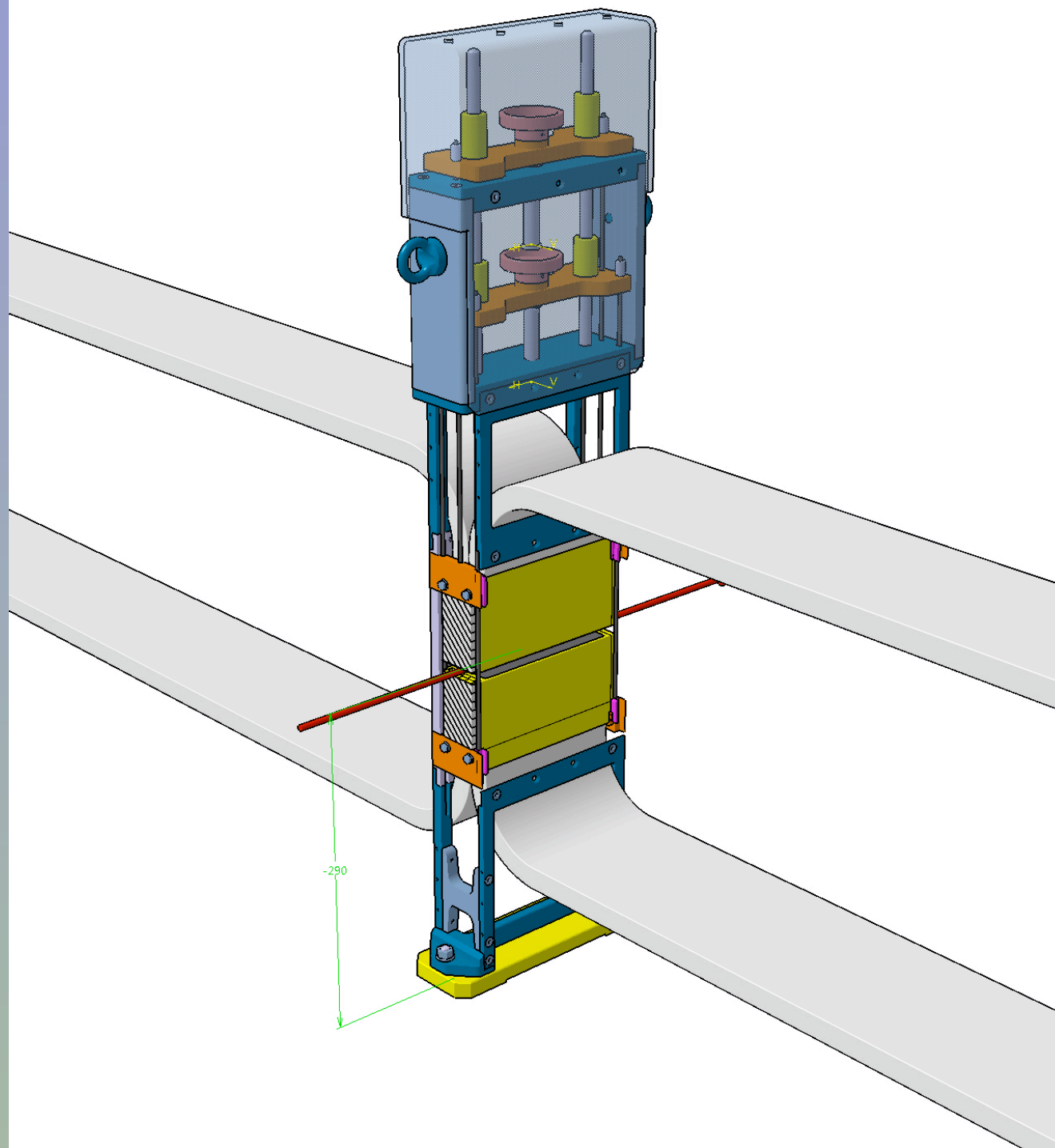


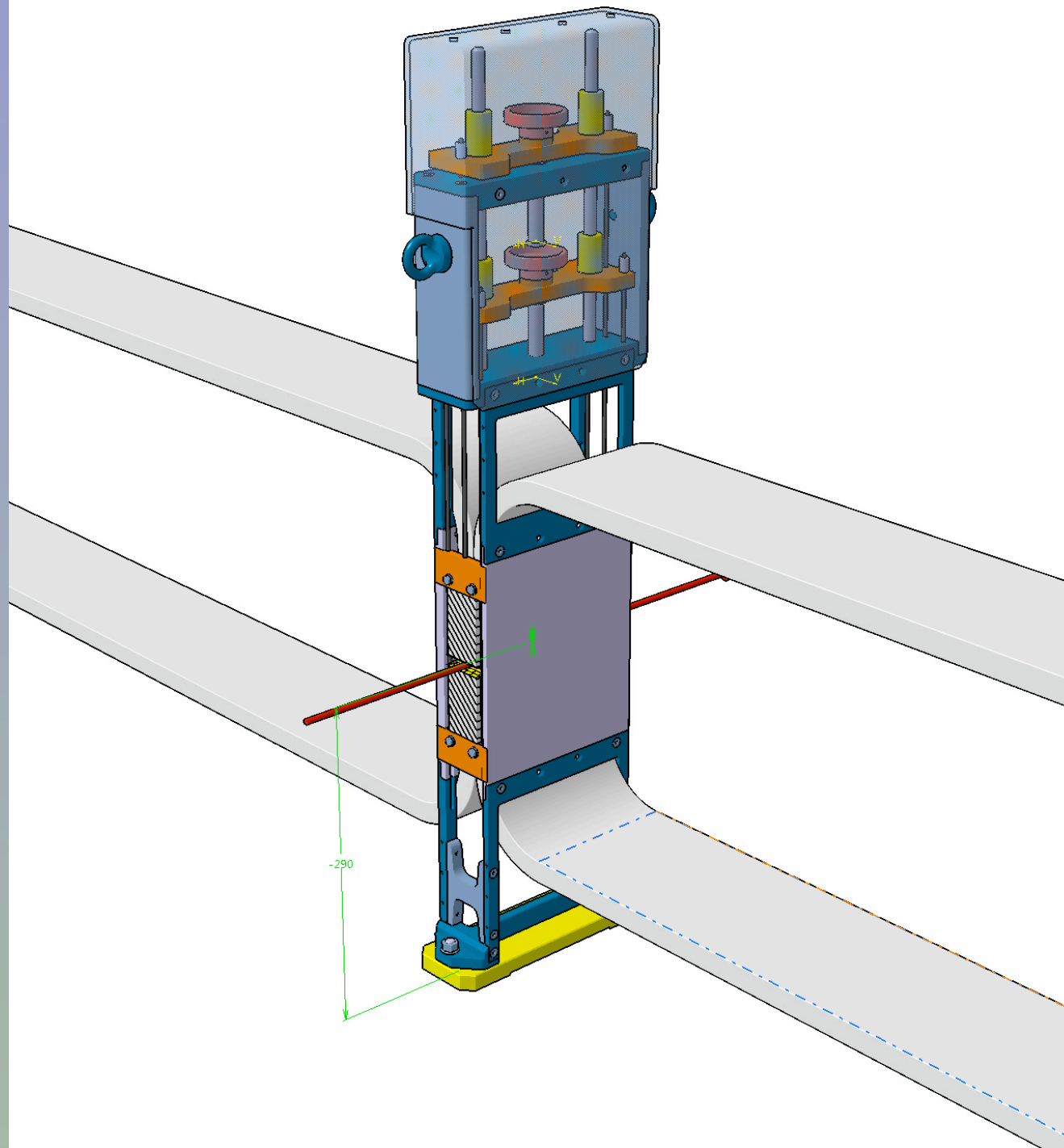




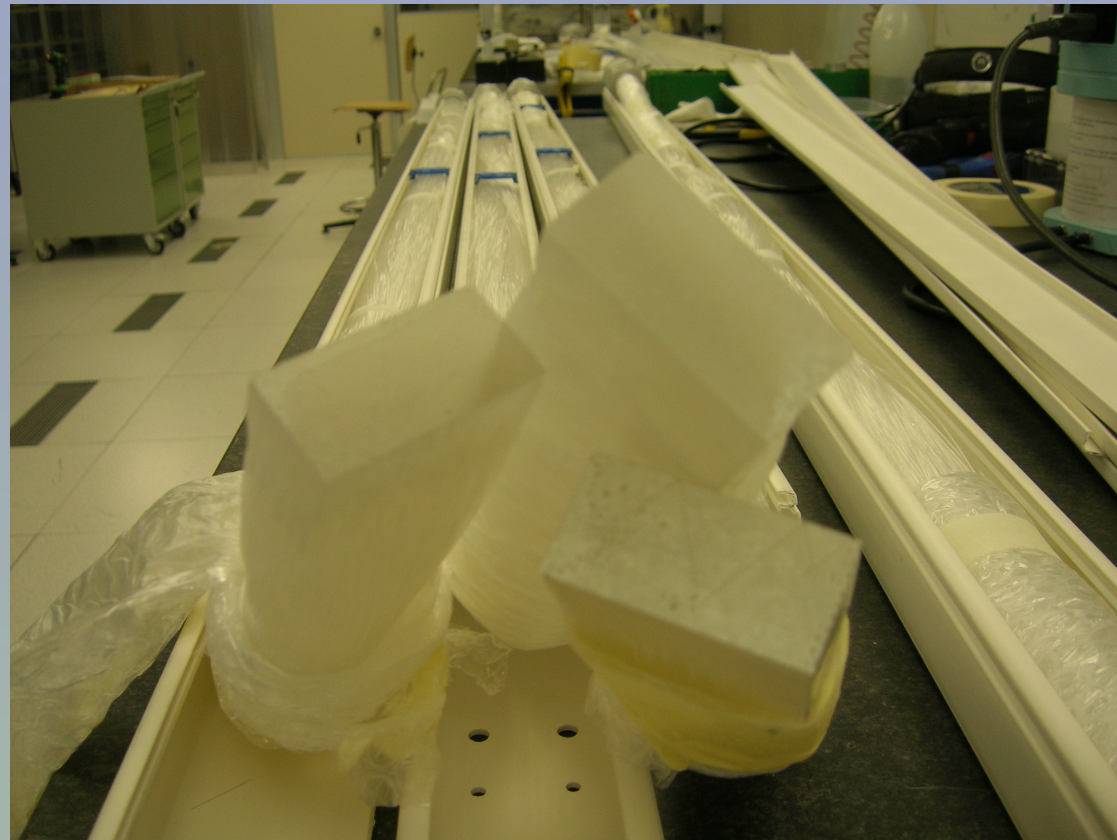








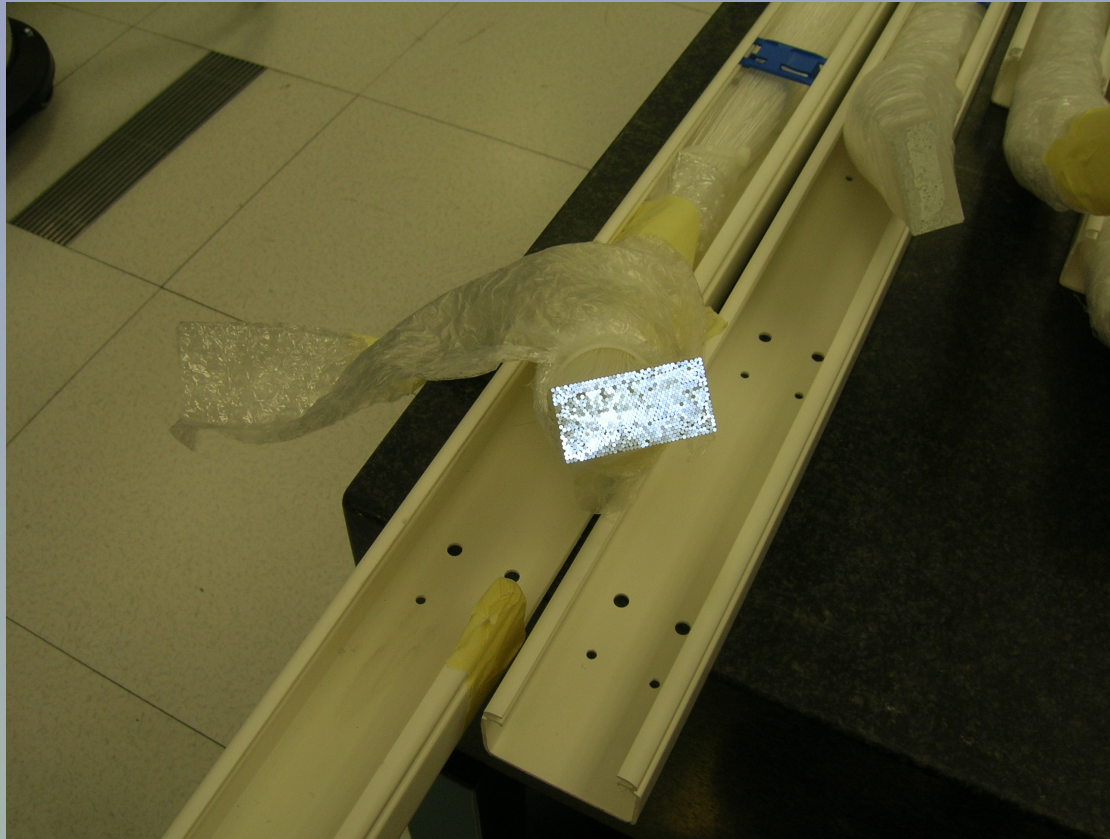
Bundles of clear plastic fibers production



Bundles of clear plastic fibers production

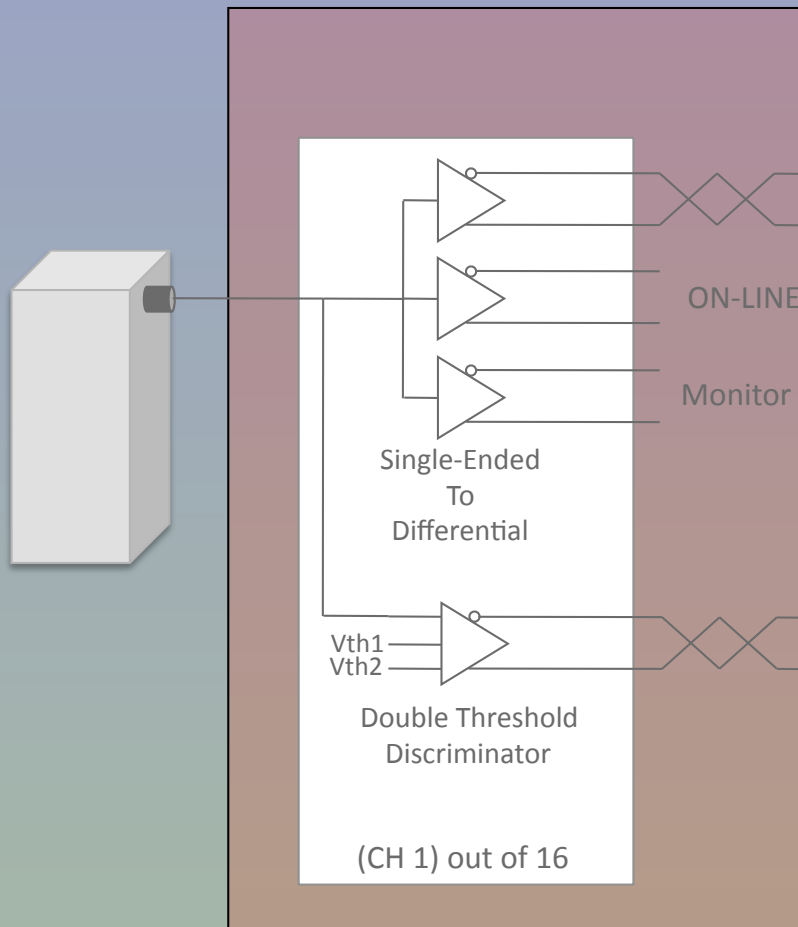


Bundles of clear plastic fibers production

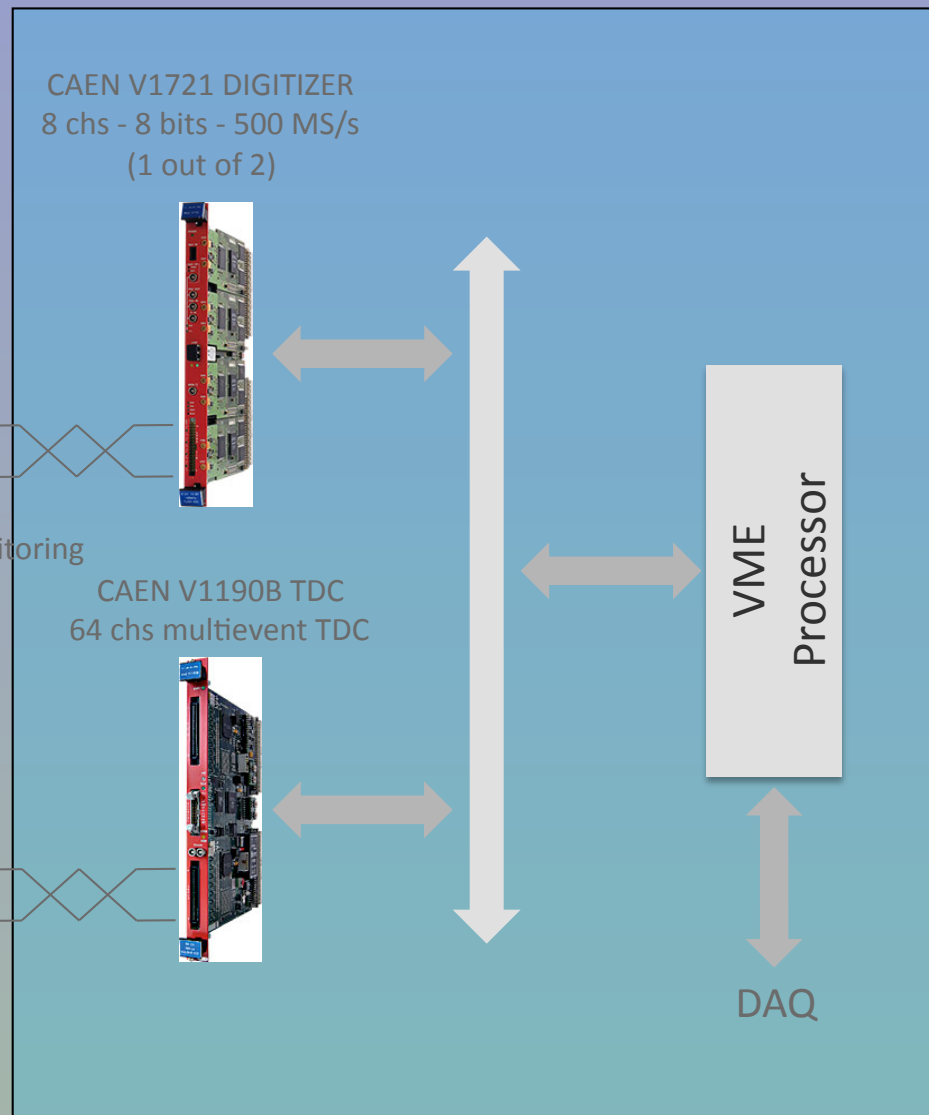


DAQ schematics

Front end electronics,
by the detector (2 m away)



BESIII Counting Room (20 m away)



Stato acquisti 2011 @LNF

Mat. costruzione apparati <i>scheda elettronica(splitter e disc) custom LNF</i> <i>guide luce (28Km fibre, 1mm diametro)</i> <i>strutture meccaniche ZDD (piastre Al, Ni-Cu)</i> <i>prelievo magazzino centrale e metalli</i>	5.0 offerte/ordini x 15.0 (bundle) x richieste offerte x 3.0
<i>PM (1Keuro/PM, 12PM)</i>	12.0 ordinati (12 in arrivo ad aprile/6 a maggio x
Crate NIM Crate VME + CPU Elettronica ZDD (2FADC, 1TDC) Alimentazione PM (PowerSupply system, H.V. ch.)	da acquistare 5.2 x 16.7 (1ADC, 1 TDC) x 14.0 ordinati x

x a LNF

x richiesta offerta/ ordinati

Dettagli richieste CON. / INV. LNF 2011

GUIDE DI LUCE in fibra plastica, L=2 m per portare segnale a PM

Offerta ditta Luceat (BS) : fibra plastica non rivestita da 1mm: Prezzo 0,39 Euro/m

Necessari 14 Km di fibra/modulo, 2 moduli = 28Km → **15K€**

PM Hamamtsu, stime in corso,
(3piccoli, 1"+3medi,2")/modulo, 12 PM

1k€/PM → **12K€**

ALIMENTAZIONE PM

SY252LC PowerSupply system → 6.0K€

A1733N-SY1527 H.V. channels (12ch), 2 schede →
8.0k€ **TOT= 14 K€**

ELETTRONICA ZDD (CAEN)

1 Crate VME =3.0

1 CPU = 2.2

2FADC V1721 - 8 Ch. 8 bit 500 MS/s, 5700 *2= 11.4 K€

1TDC V1190B 64 CANALI, 5.3 K€

TOT= K€ 22.0

SOMMARIO

- **2 MODULI ZDD** da fresare a misura
- **BUNDLES :**
 - 6 x (2x4x200)cm³ → 3 pronti + 2 da fresare
 - 4x (1x2x200))cm³ → 2 avviati
 - pronti entro fine aprile

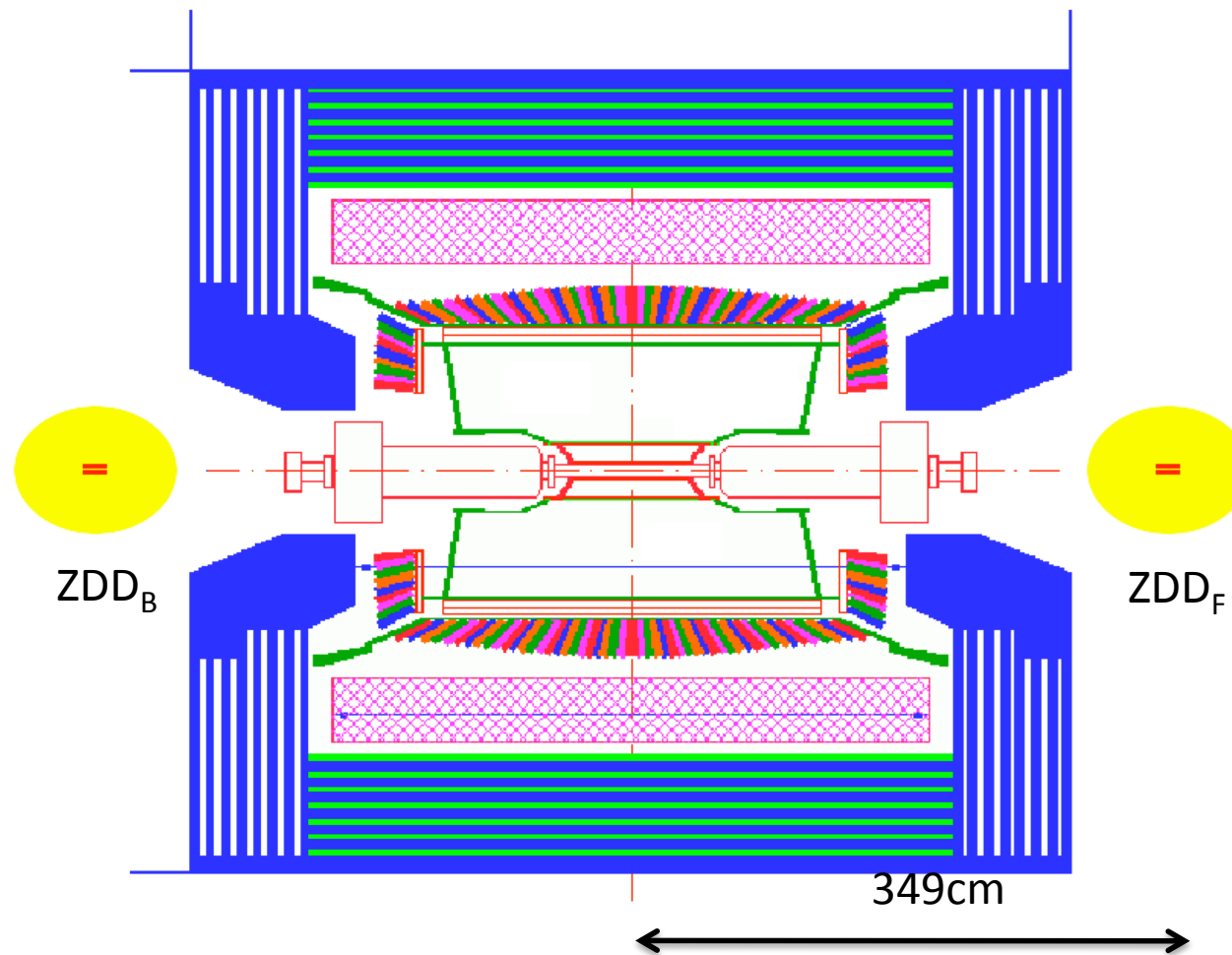
fine luglio : installazione e accensione ZDD @ BEPCII

necessario sblocco . S.J. M.E

BTF test schedule 1 settimana a maggio + 1 a giugno
al momento stand-by per interruzione linea
prox sett. nuova schedule

spares

ZDD (Zero Degree Detector) @ BESIII



Proposal accepted by INFN: substitution of one (in 2010-2011) luminometer with a mini-calorimeter based on the KLOE Pb/Scintillating fibers technique

Richieste finanziarie per il 2011 @LNF (variazione)

- variazione 1) No S.J. in M.E. per installazione
- variazione 2) Guide di luce: plexiglass → fibre ottiche in chiaro

	Richieste (K€)
Missioni estere	47.0
Missioni interne	7.5
Mat. Consumo (tot)	36.0
<i>scheda elettronica(splitter e disc) custom LNF</i>	5.0
<i>guide luce (28Km fibre, 1mm diametro)</i>	15.0
<i>strutture meccaniche ZDD</i>	4.0
<i>movimentazione (4k€/motore, 2 motori)</i>	8.0
<i>prelievo magazzino centrale e metalli</i>	3.0
<i>trasporto ZDD Roma-Pechino</i>	1.0
Apparati	
<i>PM (1Keuro/PM, 12PM)</i>	12.0
Inventario	36.0
<i>Crate VME +CPU</i>	5.2
<i>Elettronica ZDD (2FADC, 1TDC)</i>	16.7
<i>Alimentazione PM (PowerSupply system, H.V. ch.)</i>	14.0
Totale LNF	137.5

Dettagli richieste M.E. LNF 2011

- partecipazione alle riunioni di collaborazione:
 - include IB meeting
 - discussione analisi dei dati
 - discussione simulazioni
 - discussione pubblicazione e release risultati per conferenze
$$2\text{meeting/anno} \times (8\text{d in Cina} + \text{viaggio} + \text{fee}) \times 3\text{p} = 12.5 \text{ K€}$$
- partecipazione a BESIII Physics Workshops:
 - discussione analisi dei dati
 - discussione simulazioni
 - discussione pubblicazione e release risultati per conferenze
$$2\text{meeting/anno} \times (8\text{d in Cina} + \text{viaggio} + \text{fee}) \times 3\text{p} = 12.5 \text{ K€}$$
- turni di presa dati:
 - Token turni richiesto da BESIII: 12turni/persona
$$1\text{periodo/persona/anno} \times (12\text{d in Cina} + \text{viaggio}) \times 5\text{p} = 13.0 \text{ K€}$$
- attività installazione ZDD @ IHEP:
 - attività installazione e messa in opera ZDD sul floor
$$2\text{sett/anno} \times (15\text{d} + \text{viaggio}) \times 3\text{p} = 9.0 \text{ K€}$$
- TOTALE M.E. LNF.....47 K€

Dettagli richieste M.I. LNF 2011

- riunioni di coordinamento software/fisica con i colleghi TO
 - analisi dati 2009-2010 e 2011
 - analisi canali $e^+e^- \rightarrow p\bar{p}$ e $e^+e^- \rightarrow n\bar{n}$
 - sviluppo codice per simulazioni4 riunioni/anno x (3d + viaggio) x 2pp = 5.5 K€
- partecipazione alle riunioni CSN1
2riunioni/anno x (2d + viaggio) x 2pp = 2.0 K€
- TOTALE M.I. LNF.....7.5 K€