UNIVERSITÉ DE GENÈVE

FACULTÉ DES SCIENCES

Status of the note

Davide Sgalaberna for the Mechanical design & integration WG

"Neutrino Near Detectors based on gas TPCs", JPARC

Structure of the note

- The goal is a 20-30 pages note
- Uploaded on the T2K CVS (TN-323)
- Section 1: “Introduction”

  -brief description of the ND280 upgrade detector is done
- Section 2: “Integration of the new sub-detectors in the basket”:

  - to be done
- Section 3: “Time-of-Flight detectors”:

  - to be done
- Section 4: “Target detector box”

  - everything presented at the previous workshops is added

  - different options are described (honeycomb, AIREX, plastic scintillator, AIREX+PS, 5 poles)

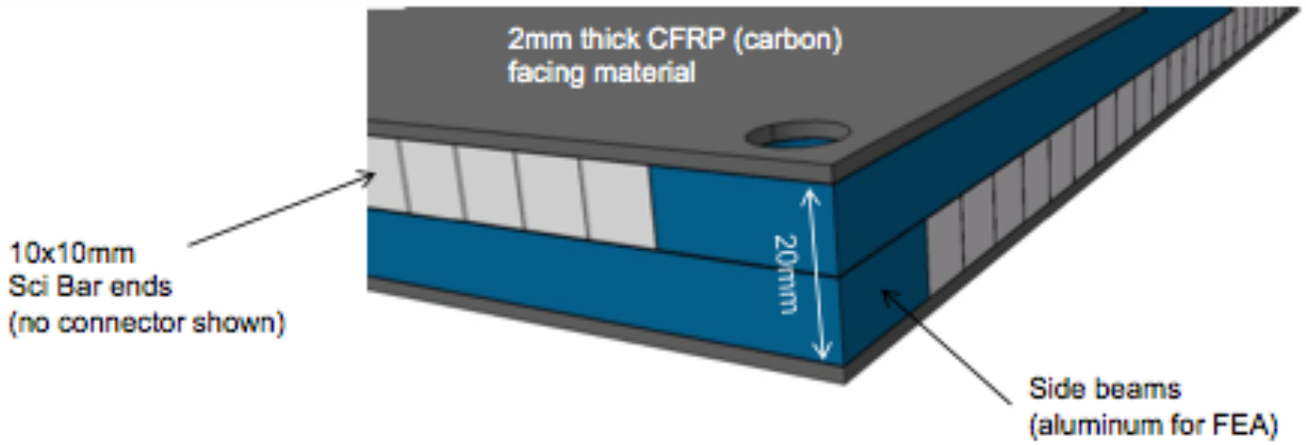
  - will be integrated with additional studies after the workshop

  - the target box could be part of the ToF detector (see talk Sim&Opt session)
- Section 4: “Mechanical structure for the new TPCs”

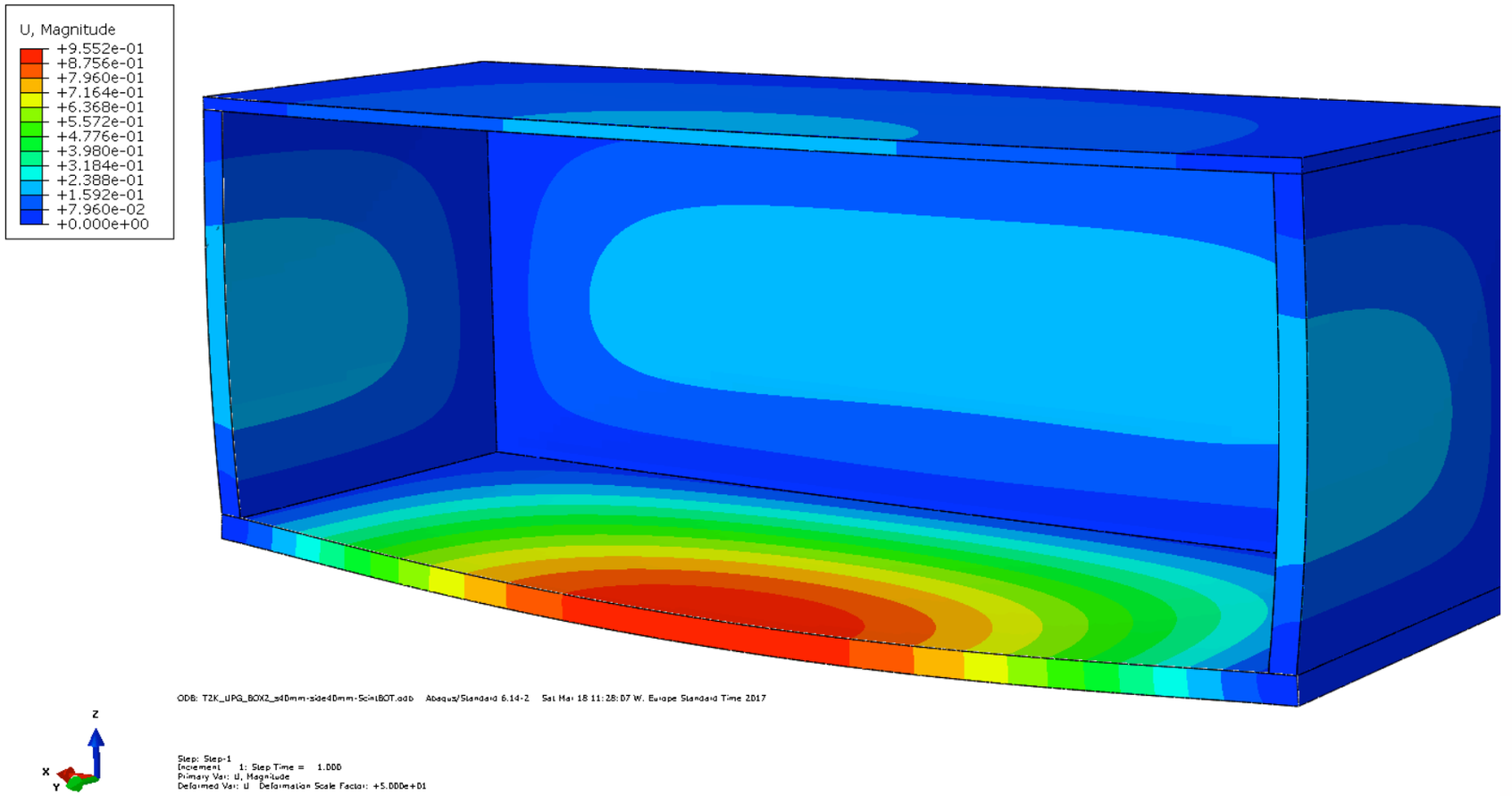
  - to be done

Target box

- Plastic scintillator box:
  - integrate the ToF detector inside the target box



Most conservative approach: water only

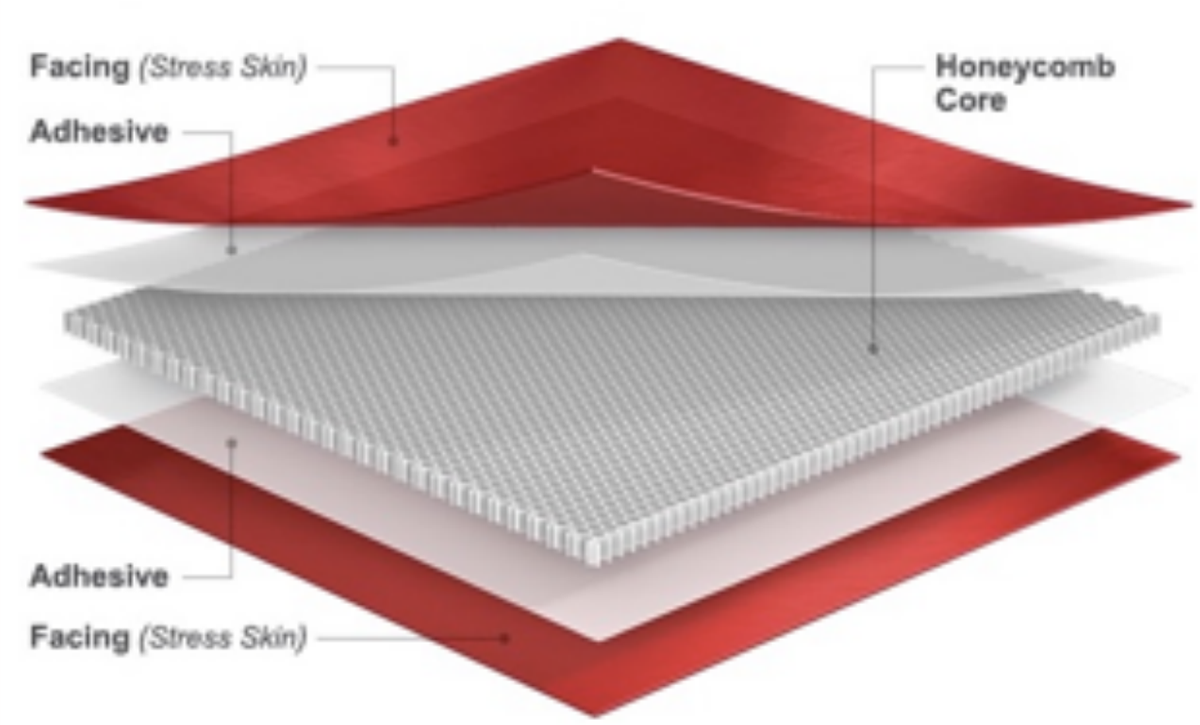


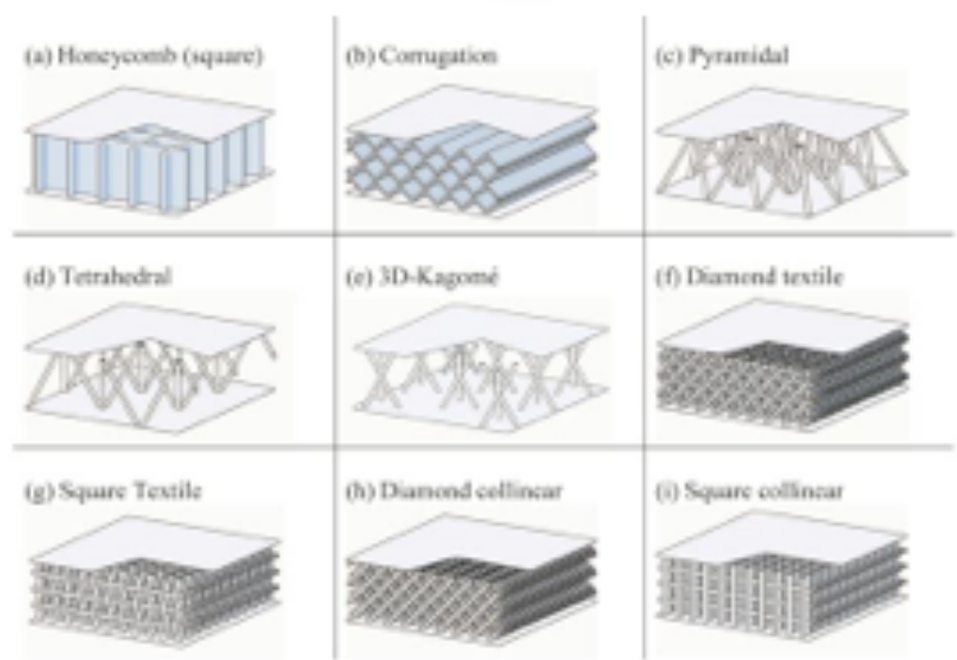
2cm: 1.9 mm deflection

4cm: 1.0 mm deflection

Target box

- Non-active box
  - AIREX or Honeycomb





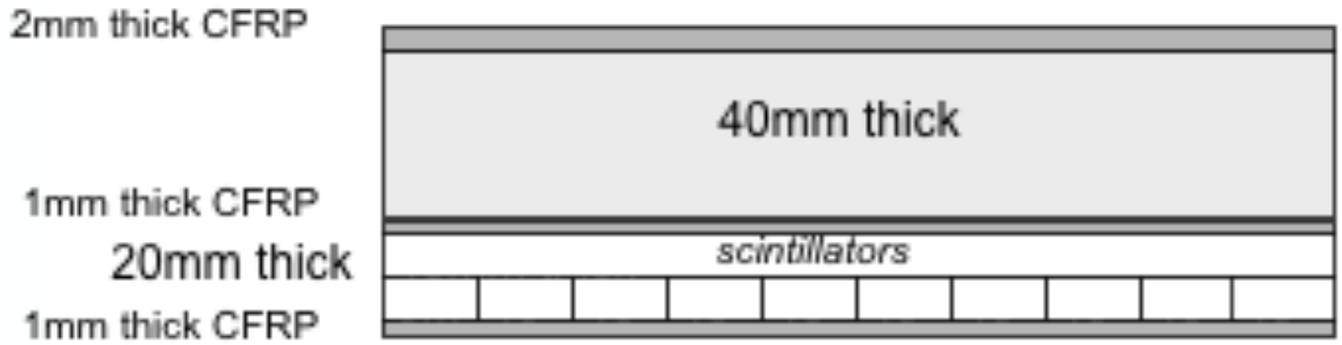
Honeycomb 4cm: 1.3 mm deflection

AIREX 4cm: 3.8 mm deflection

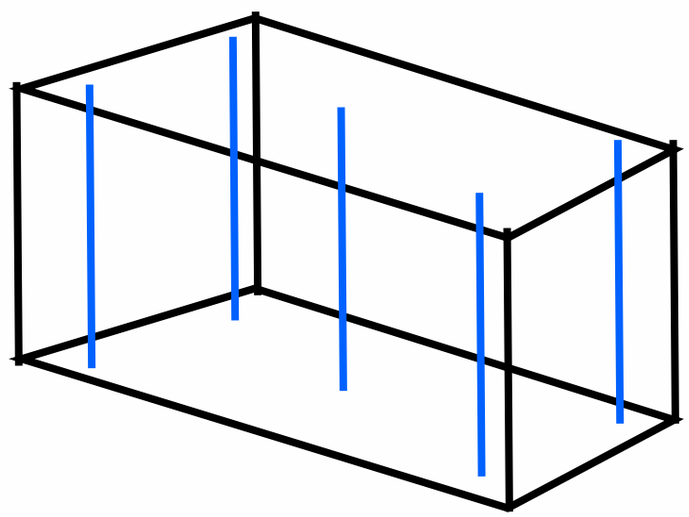
Target box

- Non-active layer (AIREX) + plastic scintillator box
  - if Target-ToF is needed this solution is good

3.8 mm deflection



- 5 poles
  - expect drastic reduction deflection at the bottom layer thickness
  - but non-active poles (~1mm?) crossing the target detector



BACKUP