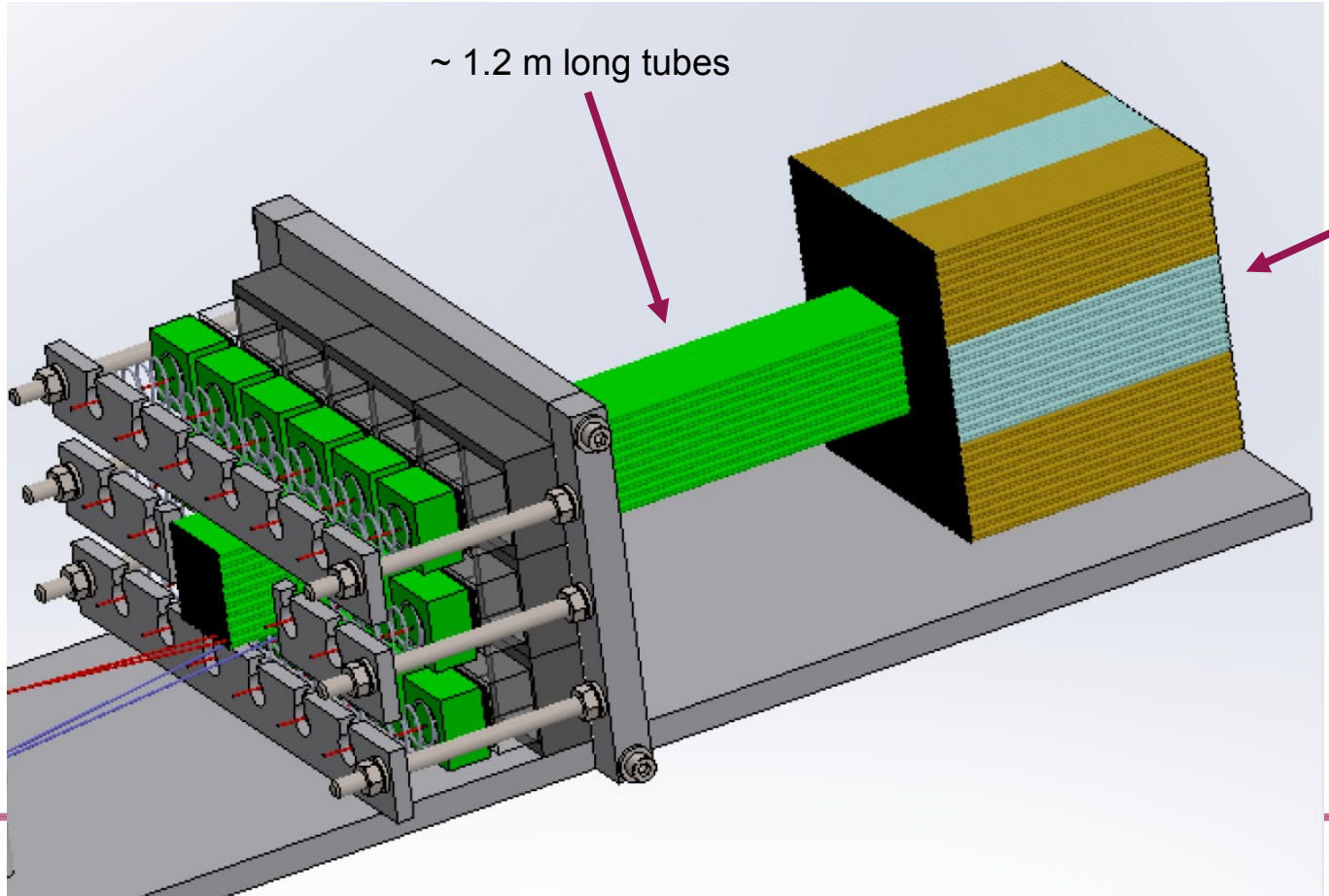
Update from Pavia

- Fiber grouping

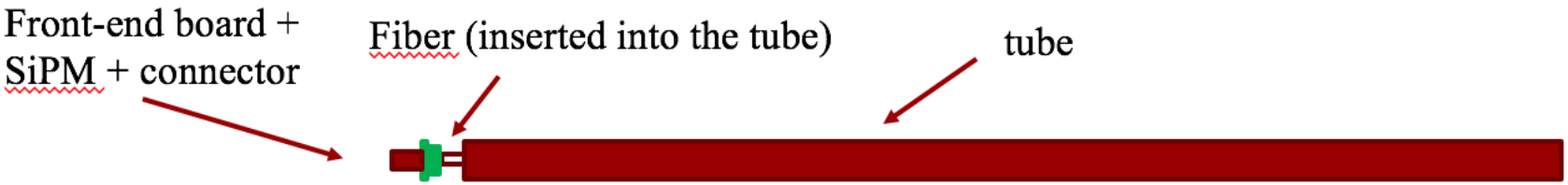
G. Gaudio on behalf of the Pavia RD_FA group
Nov. 20th 2019

SiPM-fiber connection



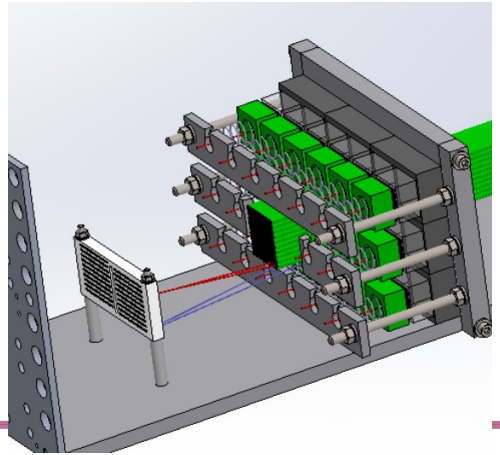
How to connect SiPMs

1 - SiPM-fiber direct connection

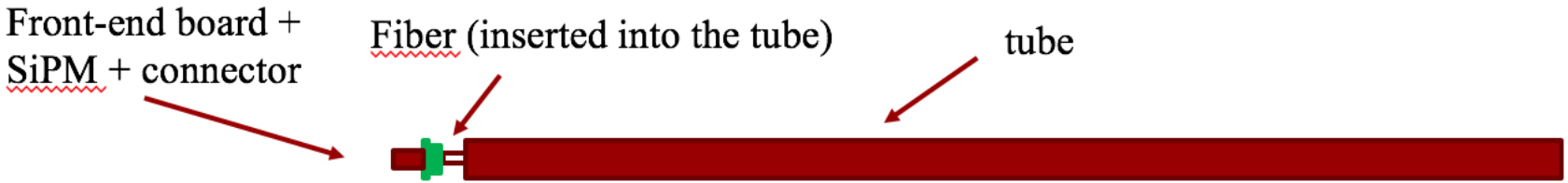


2 - SiPM-fiber connection through interface

Fiber routed to interface plate where SiPM board will be anchored



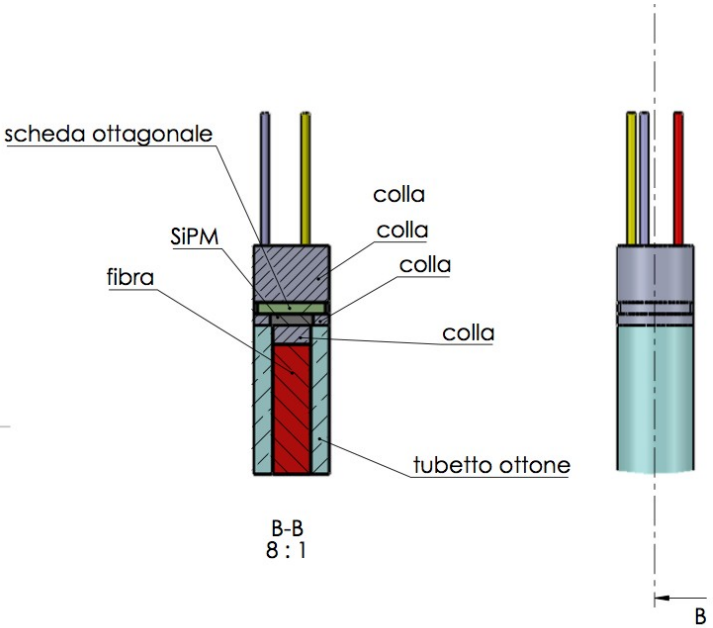
SiPM-fiber direct connection

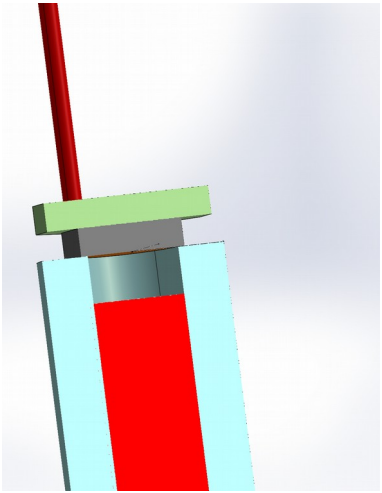


- Build the “elementary unit” of the calorimeter
- Possibility to test “elementary unit” at any stage
- Assembly elementary units
- Need a system to do in a fast and reliable way

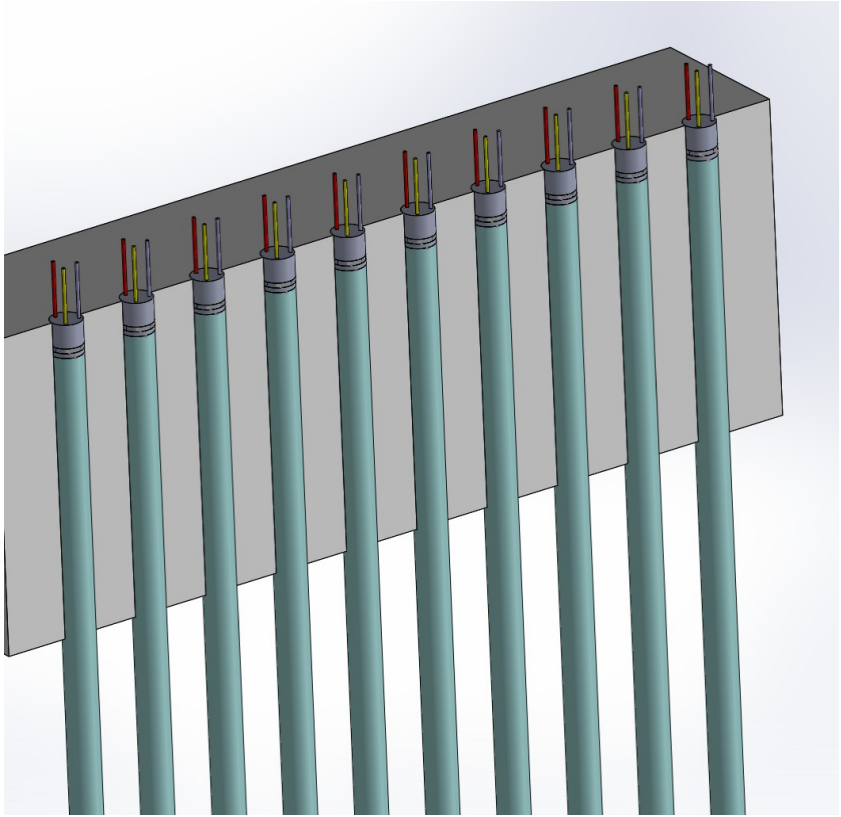
- Proposal for a mechanical mock-up to do that

SiPM-fiber/tube positioning



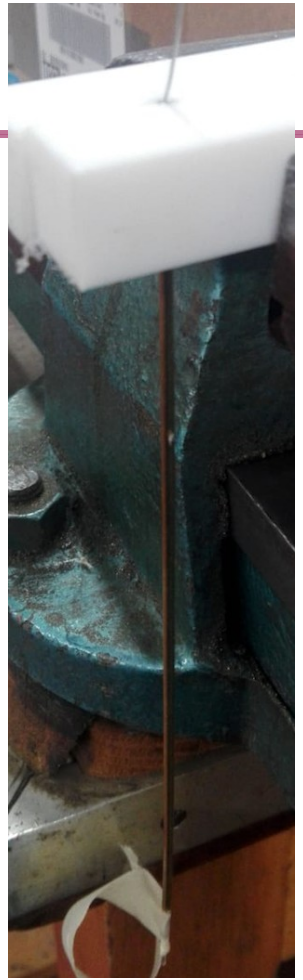


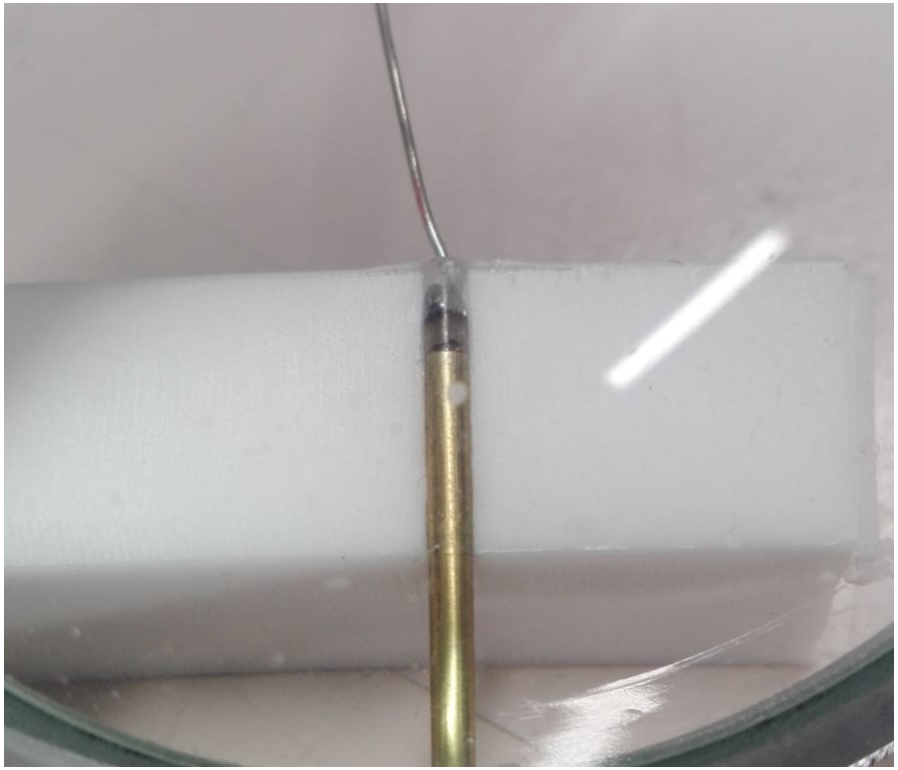
Tube holder for gluing



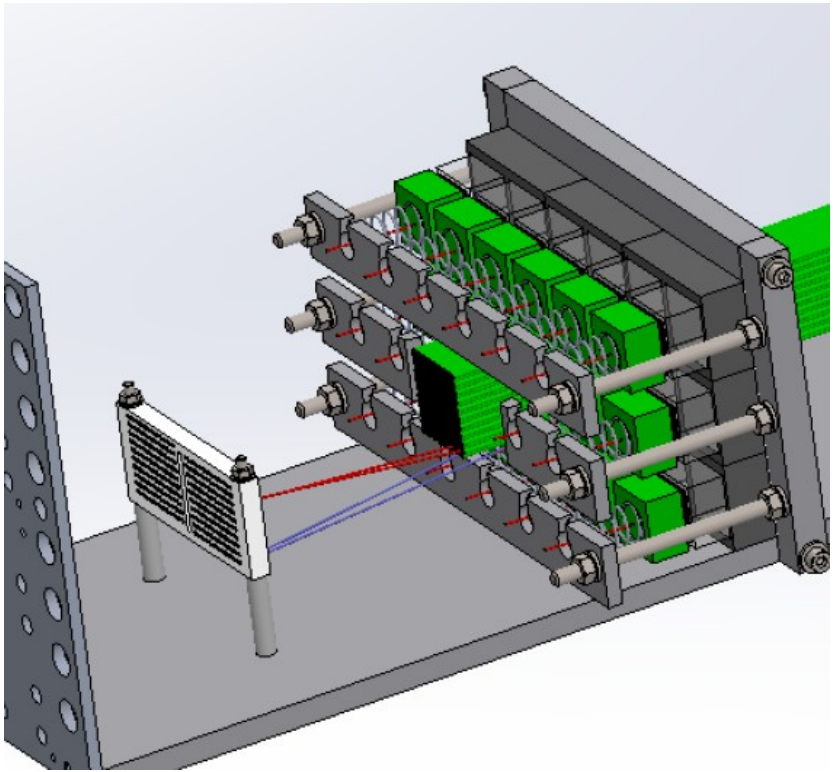
- A tube holder (for multiple tubes) is machined in Teflon in two halves
- Positioning of the fiber 1-2 mm below the tube edge
  - No lateral light leak
- Filling with optical glue
- Positioning the PMTs

First test



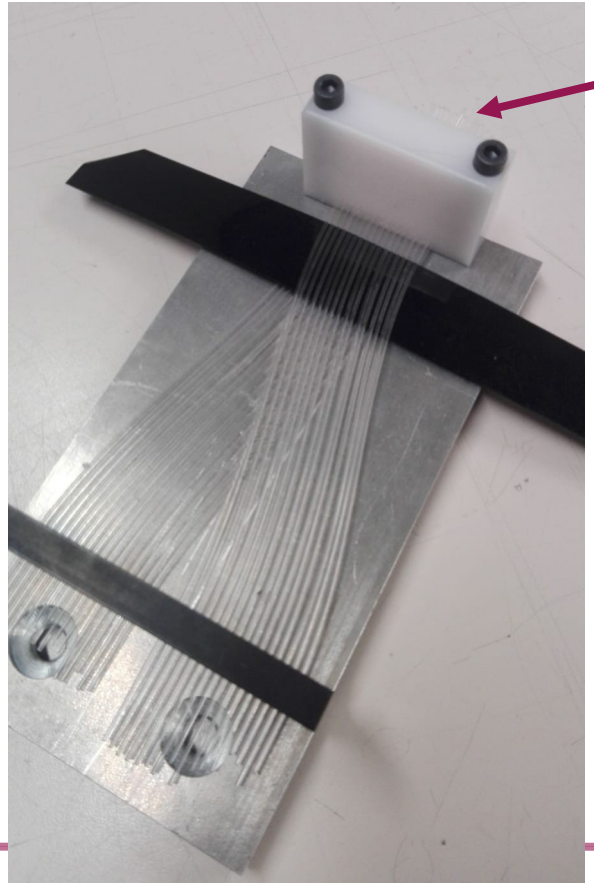


Si-PM-fiber connection through interface



- Prepare an interface where a board with all SiPMs already soldered can be mounted
- Separation of Cherenkov and scintillation fibers to avoid crosstalk
  - Pay few cm of exposed fiber
  - Not meant for the experiment
- The fiber-to-fiber distance can be increased to allow for 15 or 10 μm cell size SiPMs to be used (packaging would not allow to fit them in the calorimeter fiber-to-fiber distance)

First test



Calorimeter rear part

Glued fibers to be able to mill/polish them