Scintillation detectors with PMT readout

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Main stages of work

- PMT characterization:
  - PMT gain measurement (1-2 h)
  - PMT linearity measurement (1-2 h)
- Detection of cosmic muons (1-2 h)
- Assembling and testing of large area scintillation detector (1-2 h)
- Detection of extensive air showers (18 hours - 1 night)

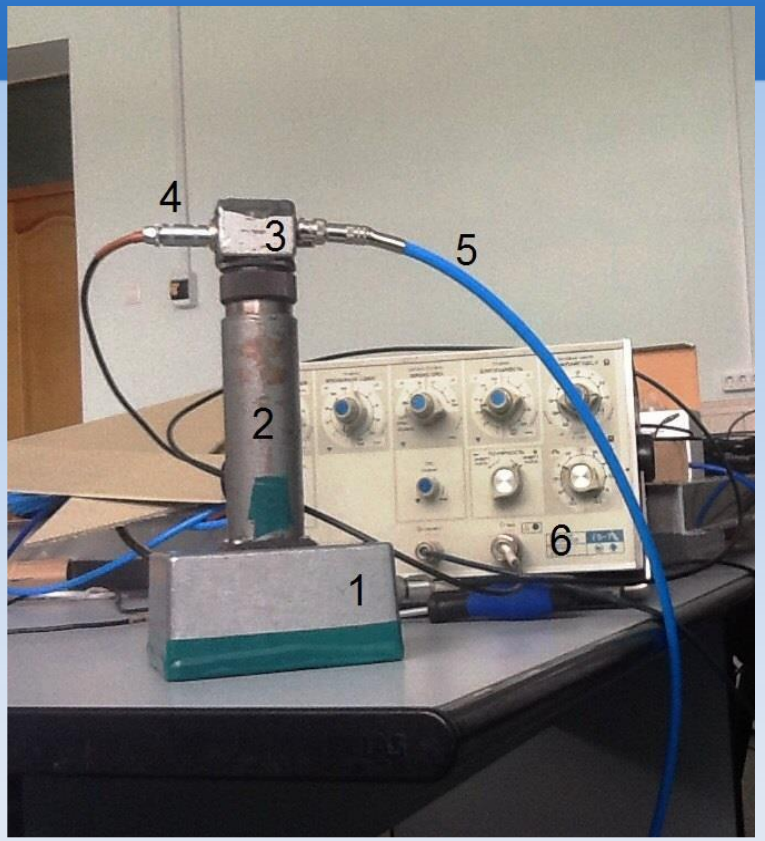
PMT characterization

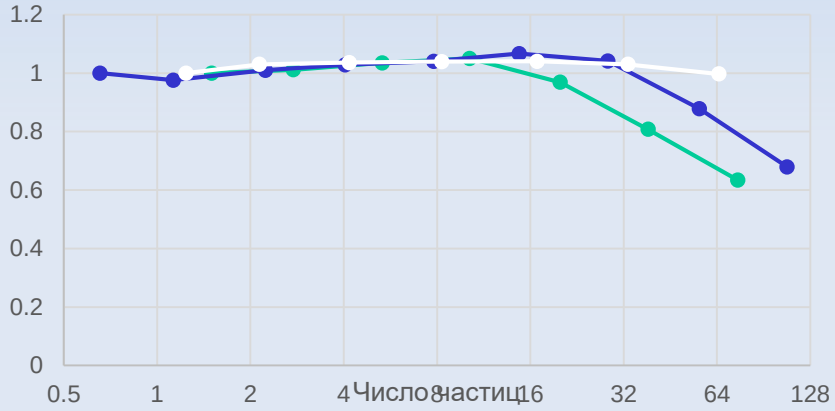
- PMT gain measurement –

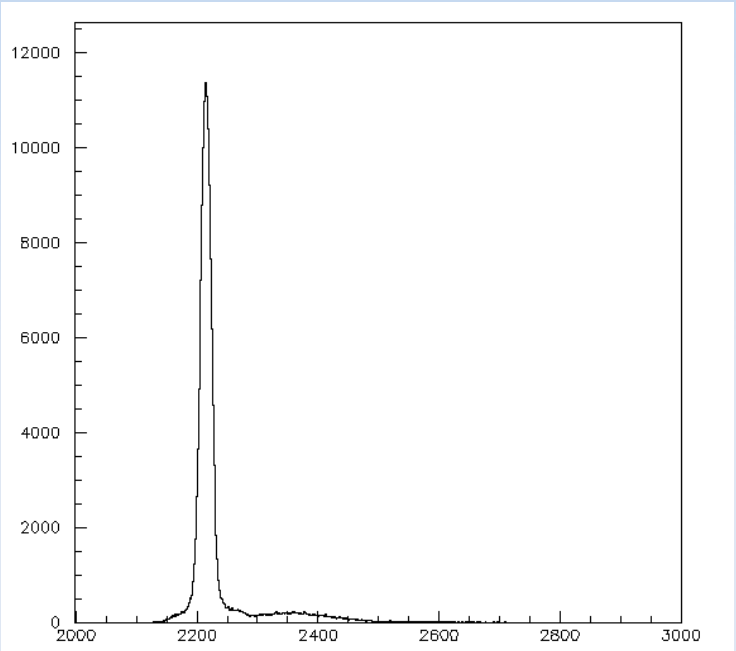
single photoelectron spectrum

- PMT linearity measurement --

two photodiods method

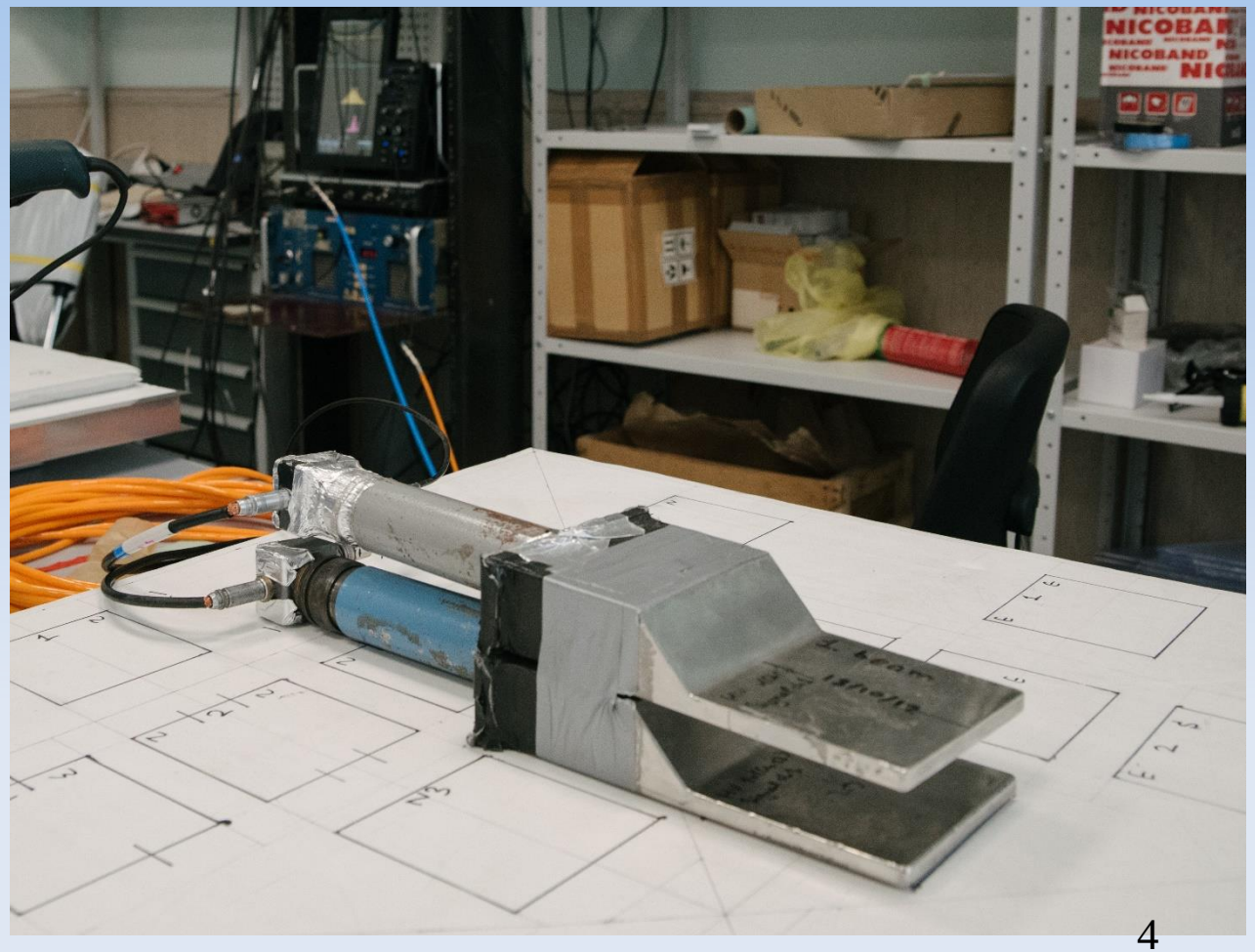




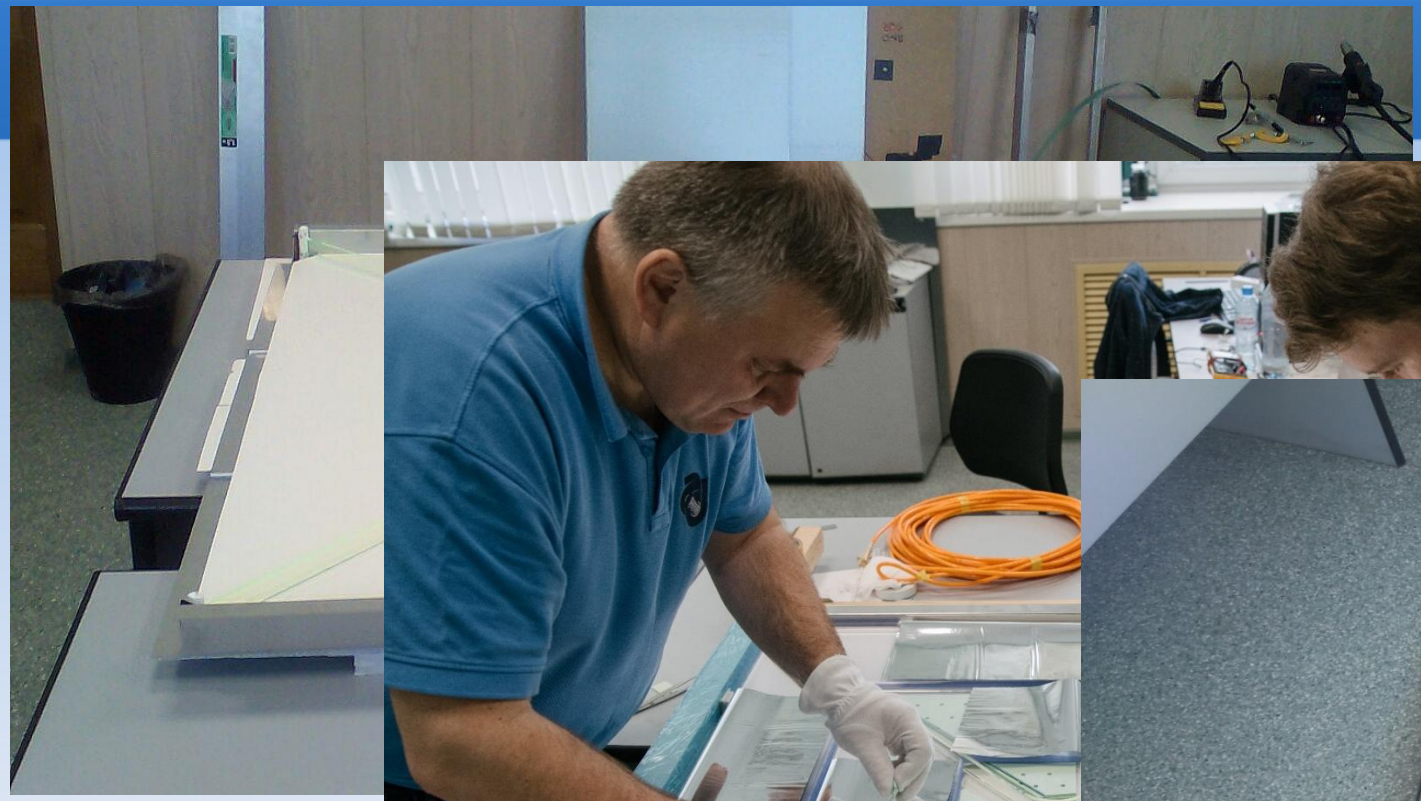


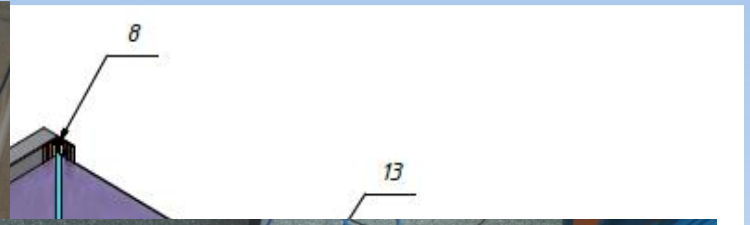
Detection of cosmic muons

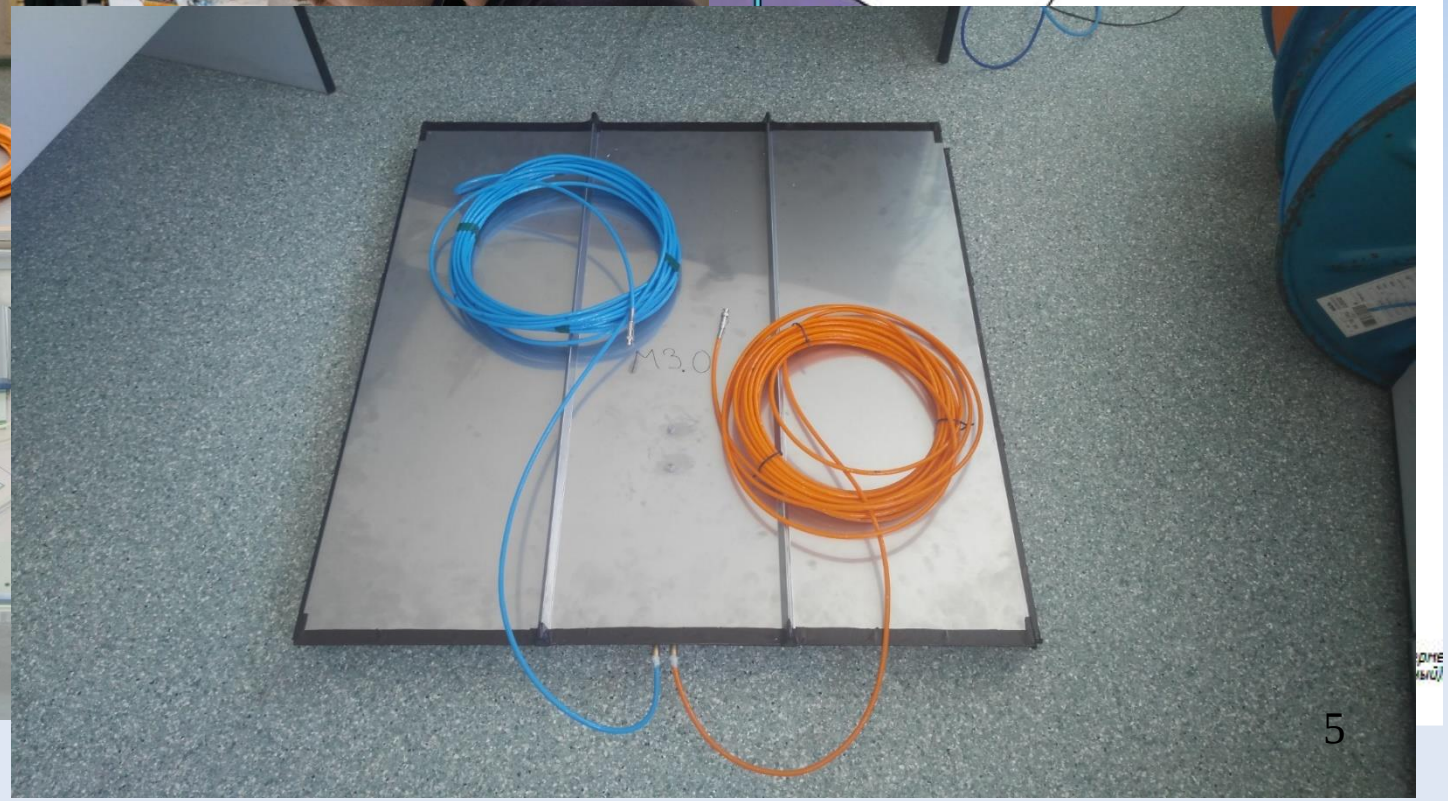
- Two counters coincidence load measurement depending on the HV supply voltage



Assembling and testing of large area scintillation detector

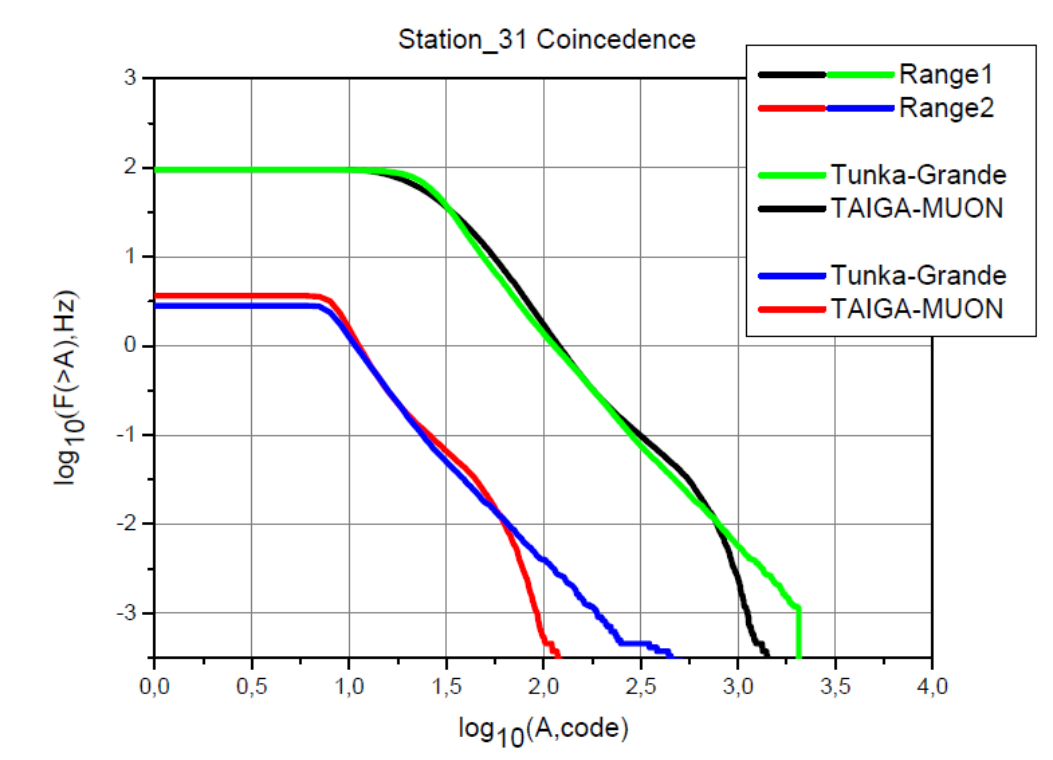






Detection of extensive air showers

- To make trigger from two adjacent large area scintillation counters
- To measure integral amplitude spectrum (about one of night data collection).



Organization of work

- Day #1 -> upto 6 students are working simultaneously at 3 workplaces (PMT measurements + muon detection)
- Day#2 -> data analysis + assembling of the counter + report preparation
- 8 days -> 6 x 4 groups = 24 students