



VULCAN

Vacuum Ultraviolet Light Characterization At Nikhef

Noble liquids scintillate in the VUV

LAr and LXe are good scintillators

Scintillation light in the VUV range



Study material properties in the VUV range

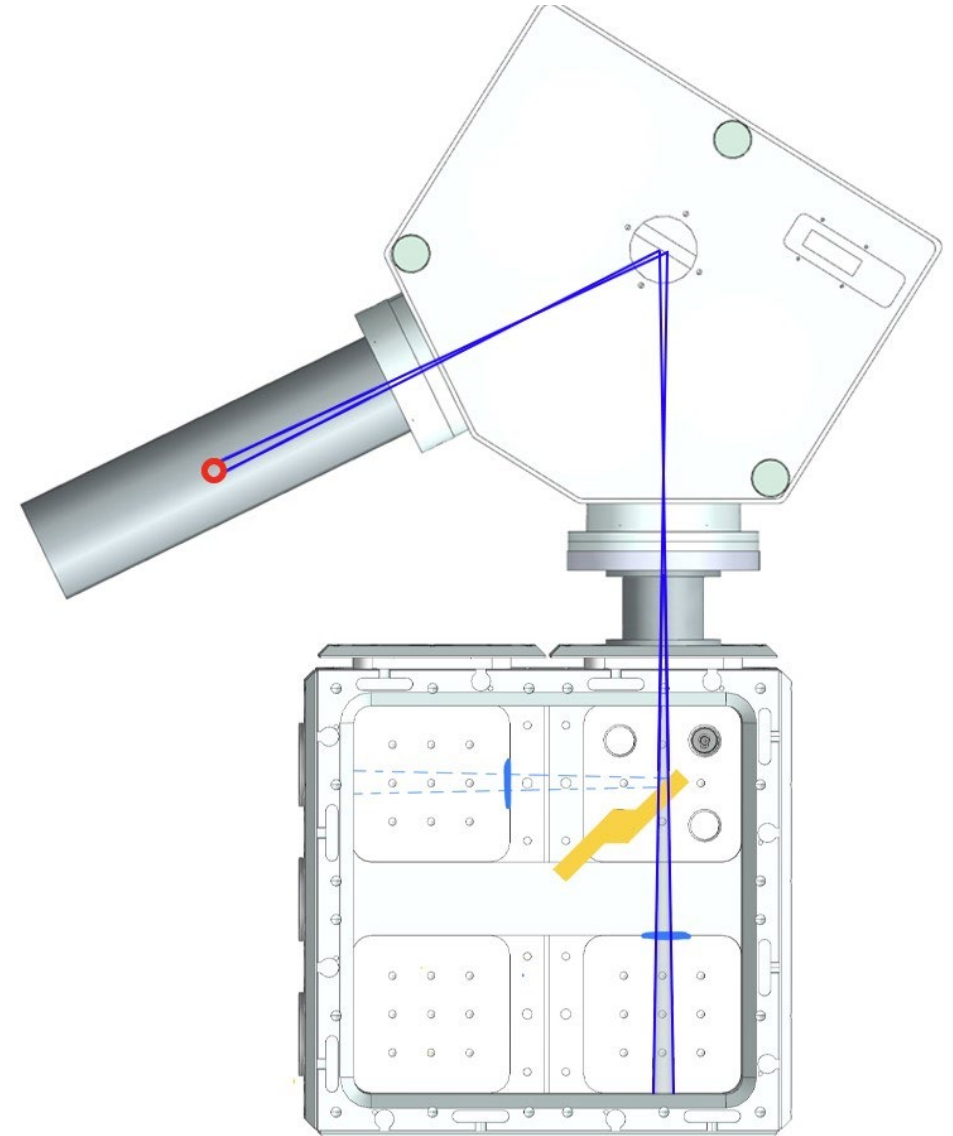
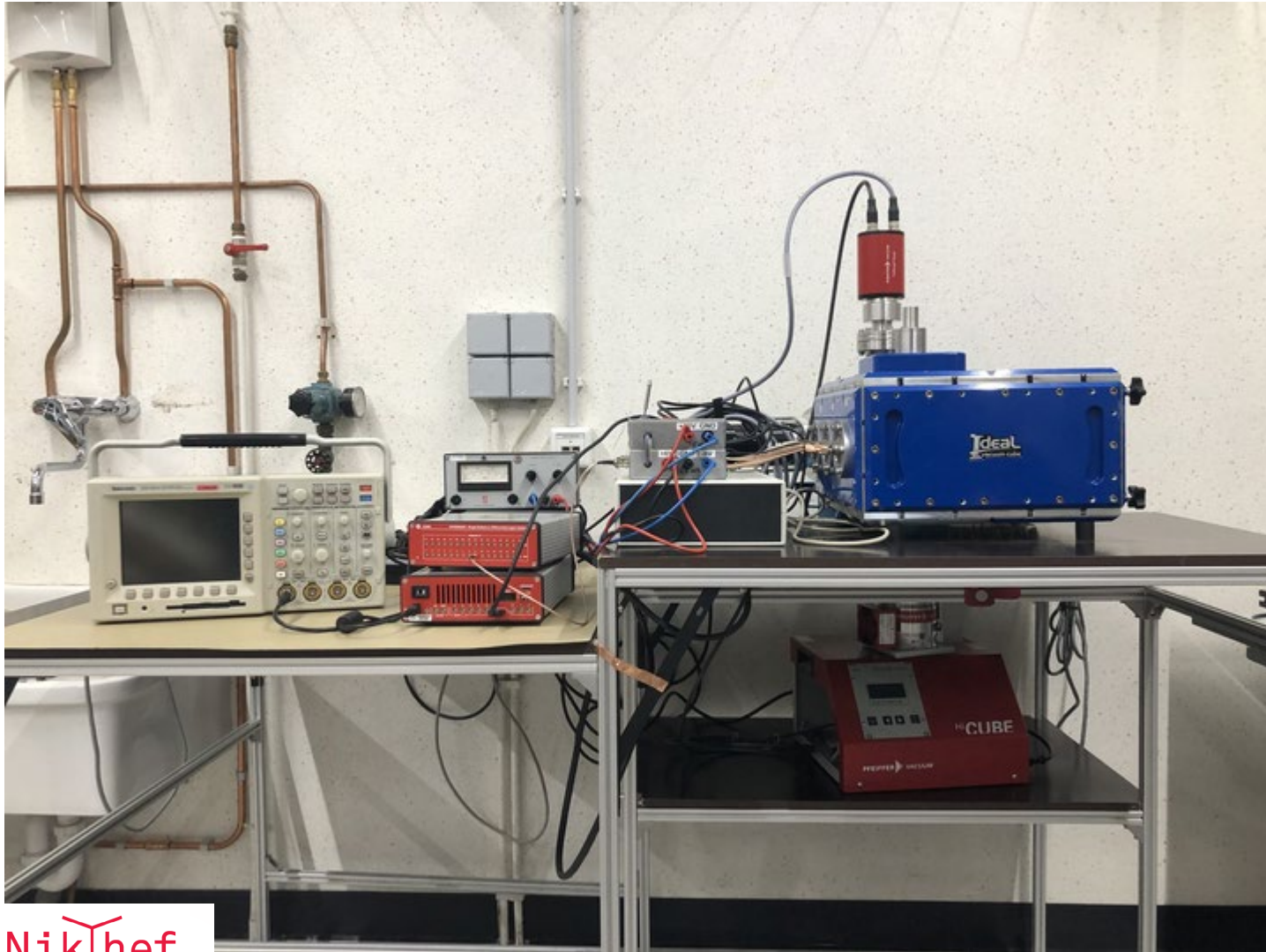
Detector materials reflect, transmit and absorb scintillation light

Essential to understand!

VUV measurements are hard



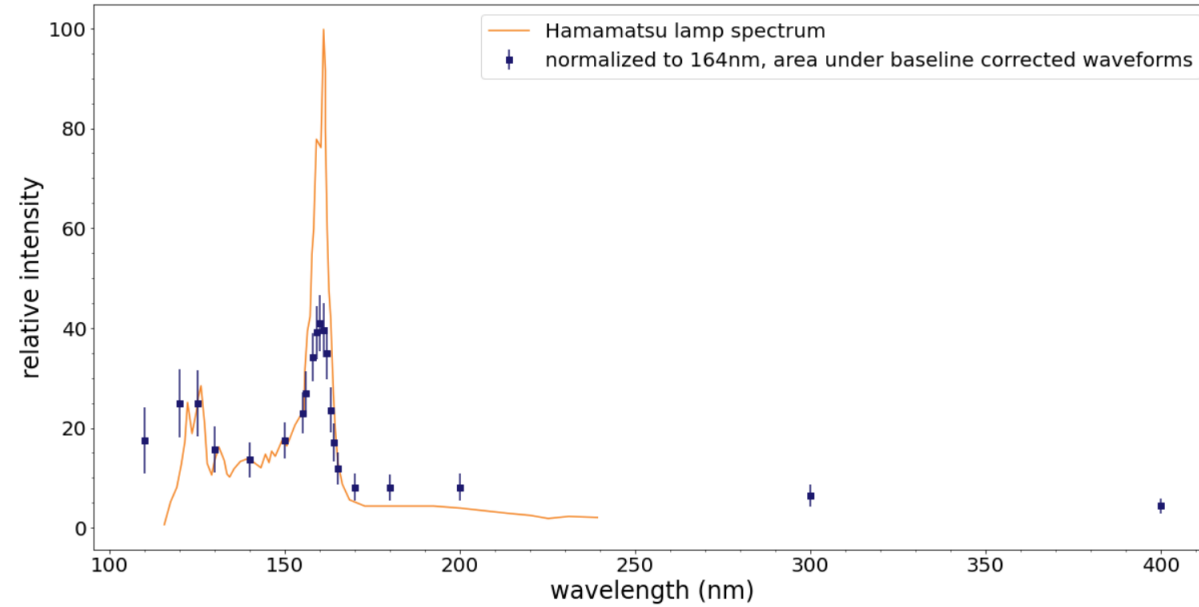
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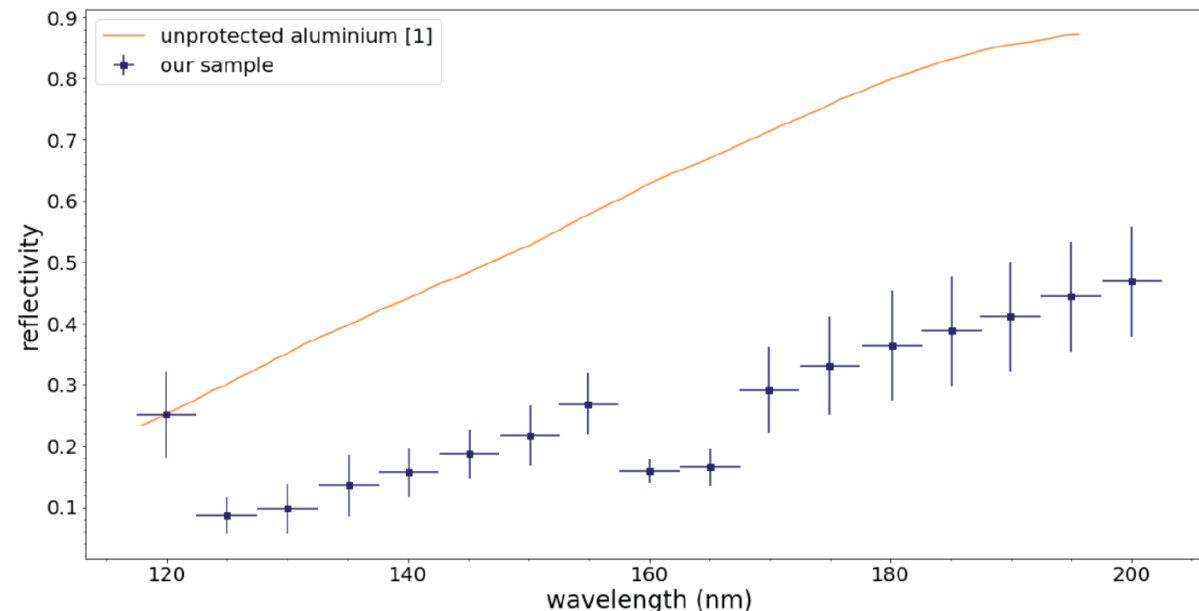
Commissioning results

- lamp spectrum
- reflectivity of a blank aluminium sample

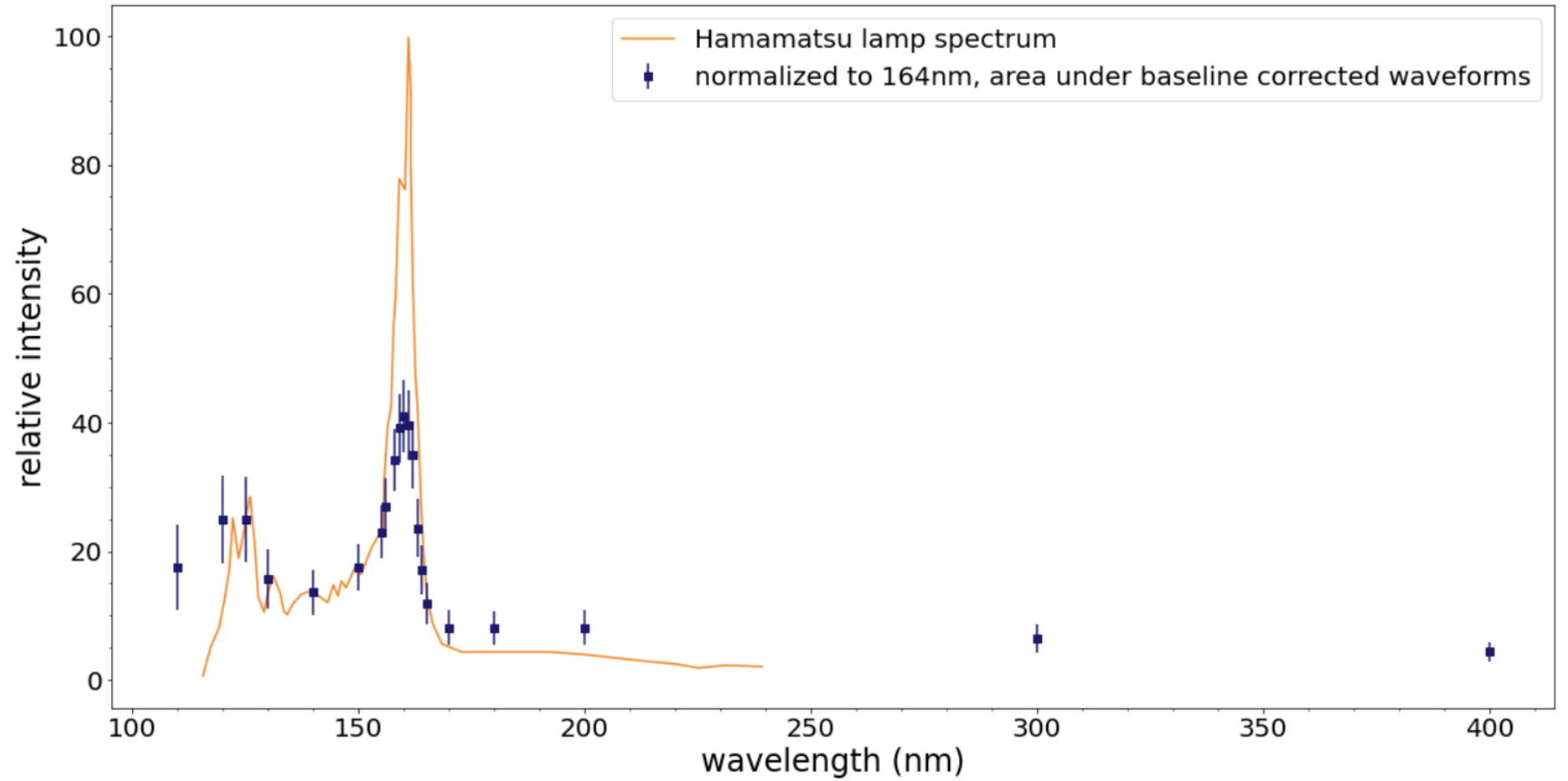
Measured spectrum of the lamp corrected for SiPM sensitivity



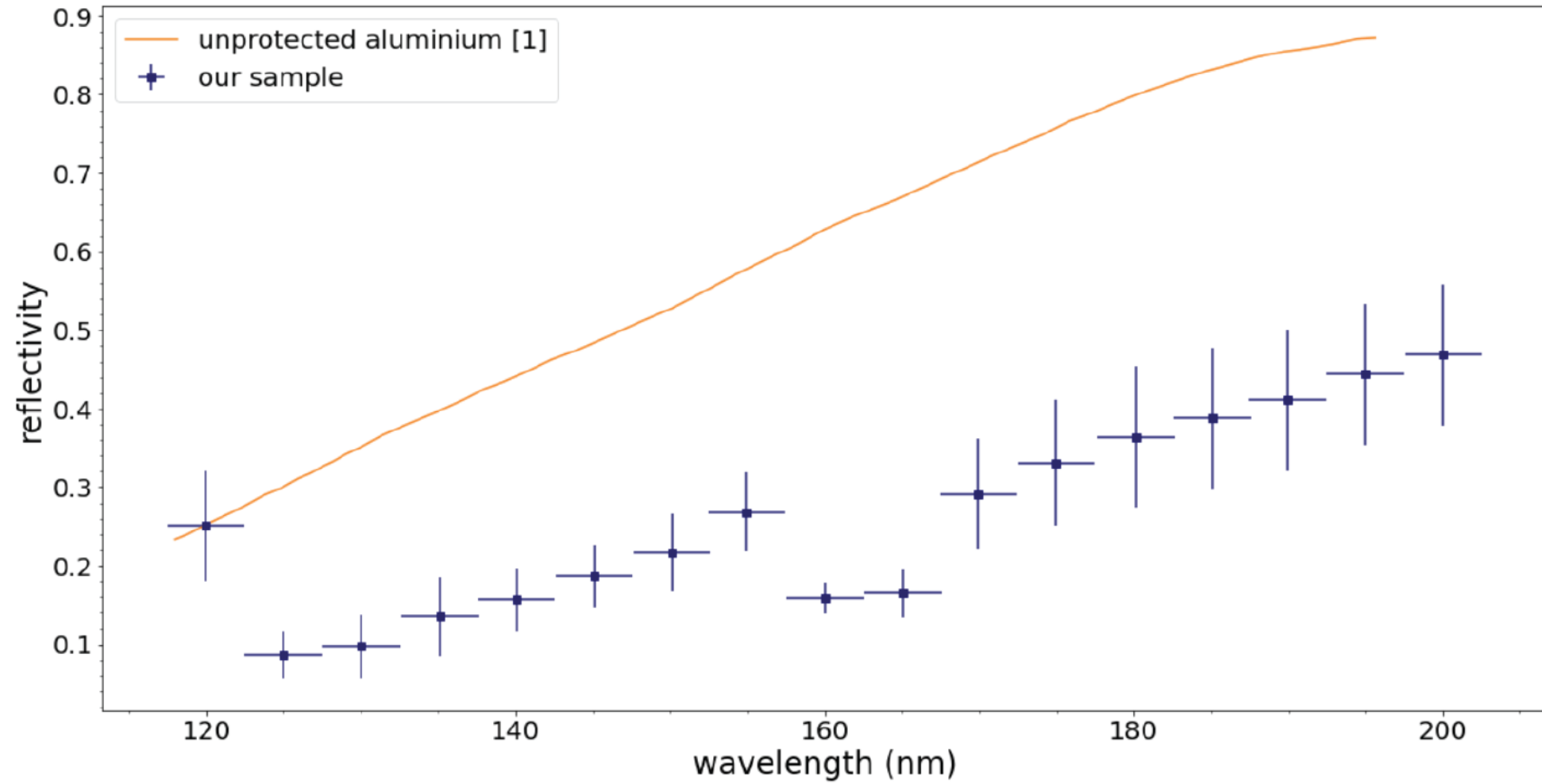
Measured reflectivity follows expected trend



Measured spectrum of the lamp corrected for SiPM sensitivity



Measured reflectivity follows expected trend



Next steps

- Reduce electronic noise
- Install new digitizer for quicker data taking
- Repeat calibration measurements
- Measure samples from ProtoDUNE cryostat, cathode and field cage
- Look into sample cooling and sensor cooling