

# Dark rate induced by radioactive decays

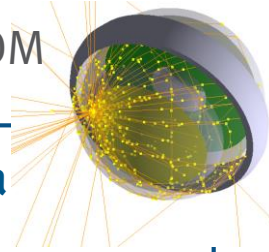
- Central detector unit of neutrino telescopes: optical modules (OM)
- Radioactive decays in OM pressure vessel cause **Cherenkov** and **scintillation** photons

➔ Understanding of this background **essential**



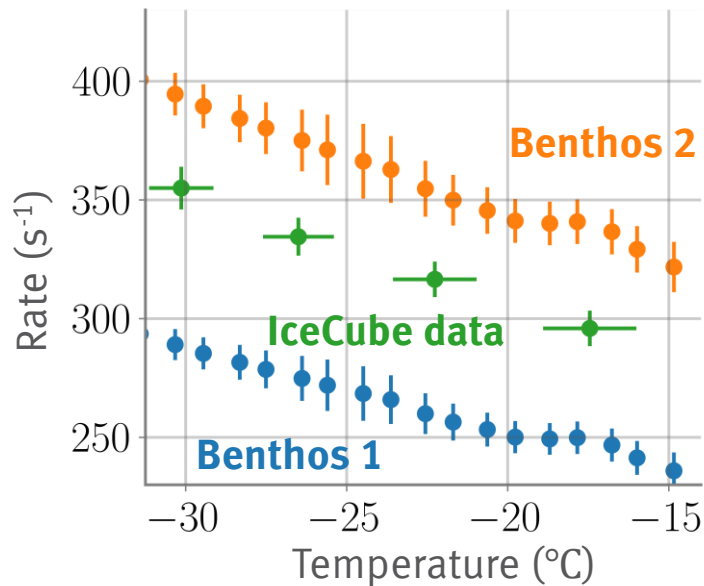
Scintillation dependent on material composition.  
Experimental determination of its parameters:

- Yield
- Lifetime **Low intensity challenging!**
- Spectrum



## Understanding experimental data

Simulation with measured scintillation parameters (● and ●) agrees with experimental data (●)



➔ Improvement of reconstruction and data analysis

## Predicting background

Realistic background simulation with different glass brands

➔ Consideration of background in design process of modules prior to prototype construction

