Search for a diffuse emission of neutrinos from Local Bubbles with the ANTARES telescope

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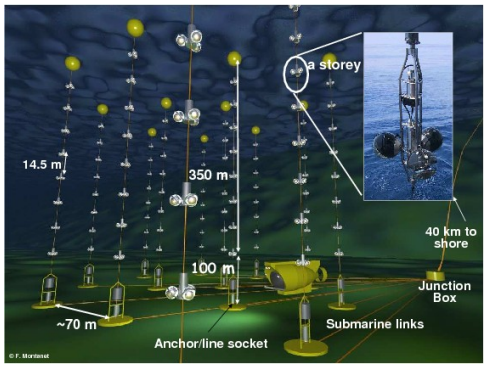


10 Mton under-sea (2.5km depth) Cherenkov ν-detector

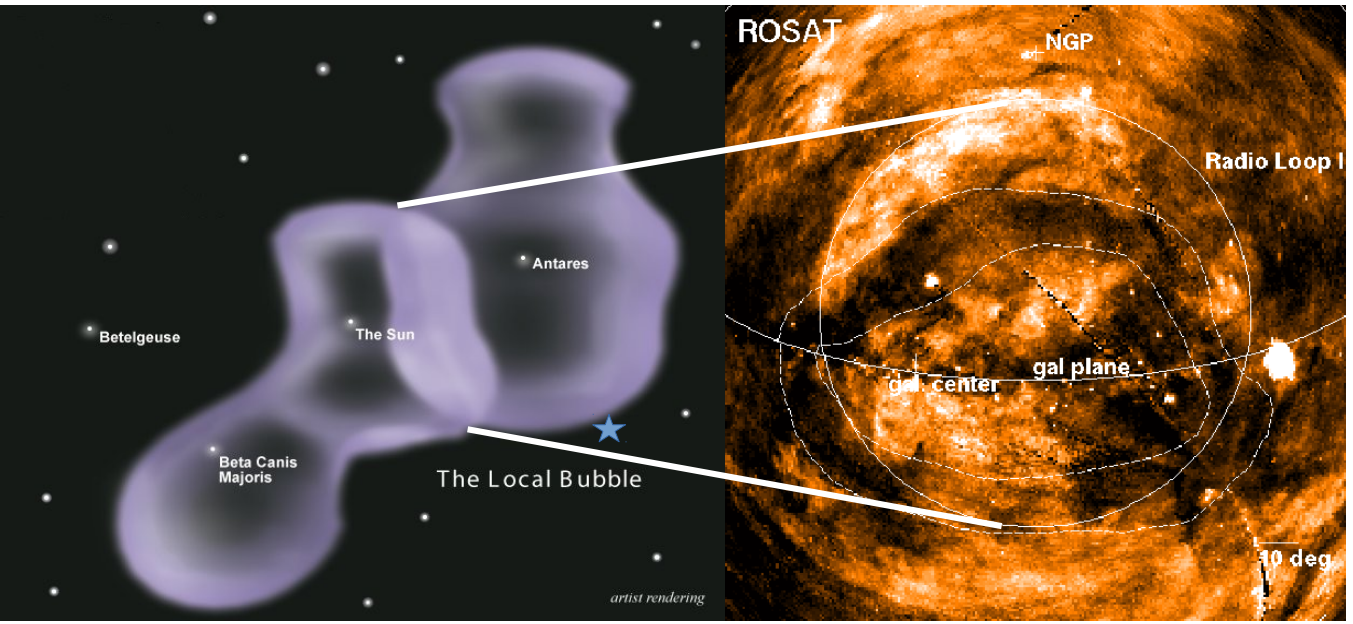
All-flavour neutrino detector

Searches for **cosmic** sources of neutrinos (point-like, diffuse, transient)

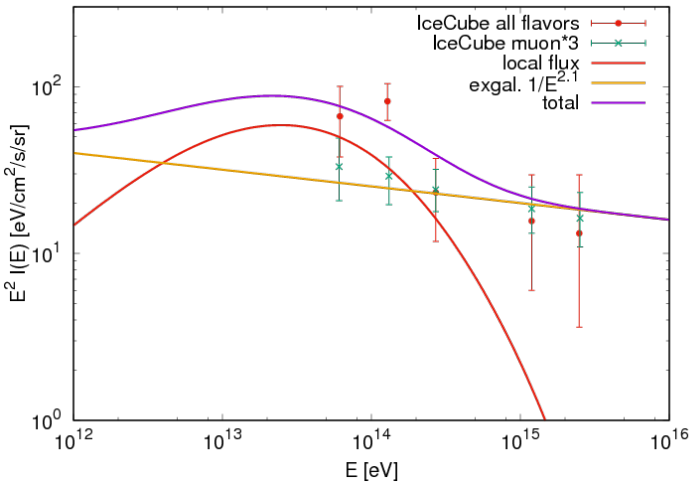
Best sensitivity for emissions **below 100 TeV**

Best sensitivity for **galactic** emission scenarios

Best visibility over the **southern sky**



Expected flux as from ArXiv:1712.03153



Event selection for upward-going events
(Earth used as a shield against CR muons)

Track channel (passing through muons from CC neutrino interactions) → Good rejection of CR muons
Limited energy resolution

Shower channel (NC and CC interactions close to the detector) → Limited volume (and statistics)
Optimal energy resolution

Model Rejection Factor optimisation for event selection

Energy-related cut to select cosmic vs atmospheric neutrinos after CR muon rejection

"Flat" cosmic background considered as well in the optimisation procedure

2 emission scenarios:

Full circle – 60° radius, centred at gal. coordinates (17.5, -30)

10°-thick ring with same radius and centre

Assuming all the Loop1 emission comes only from these part of the sky