PINGU configuration and plans

MANTS 2014

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for the IceCube-PINGU collaboration

PINGU configuration
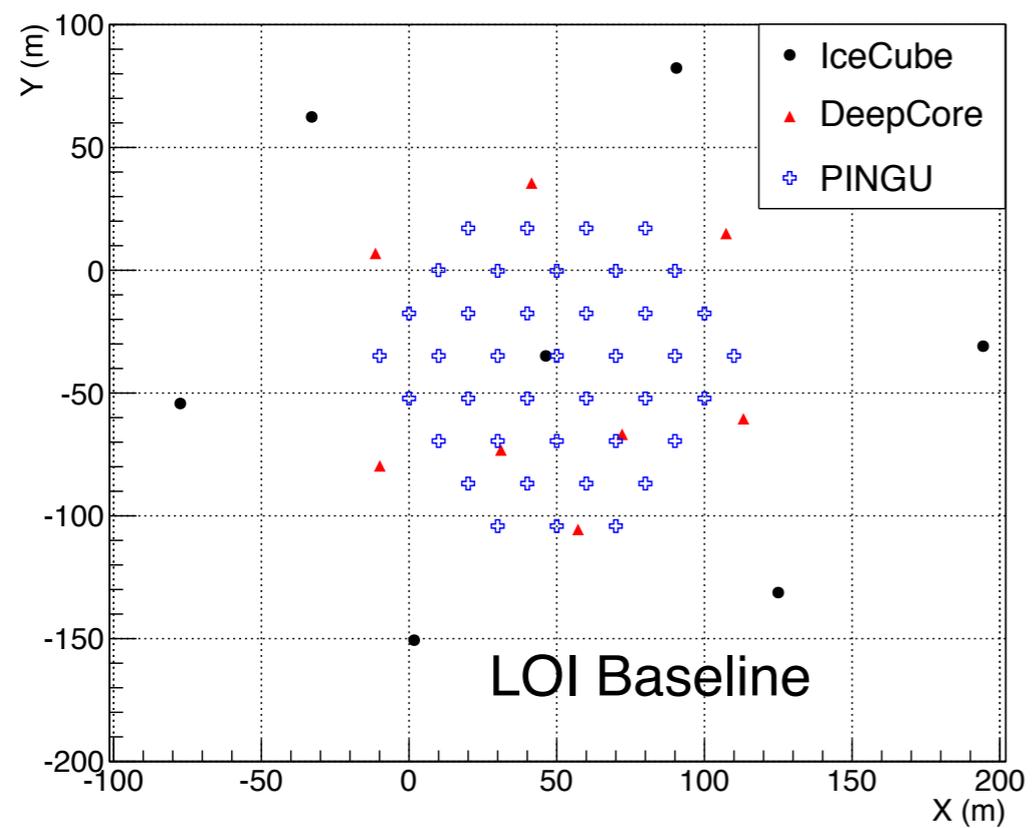
- initial configuration from the LOI studies remain baseline comparison

PINGU configuration
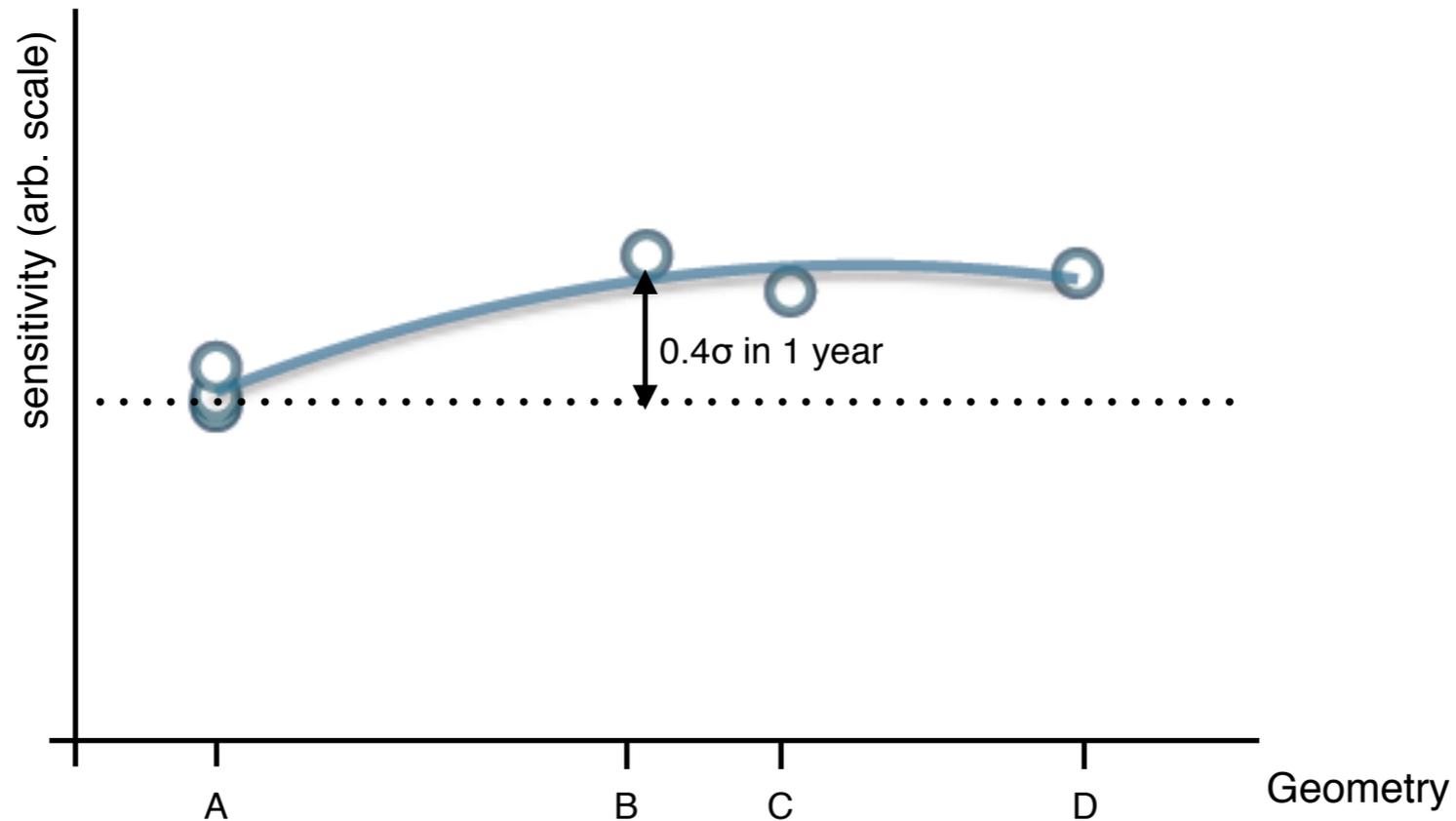
A - 40 strings (~12-30 m spacing); 60 DOMs (5 m spacing)

B - 60 strings (20 m spacing); 60 DOMs (5 m spacing)

C - 40 strings (20 m spacing); 96 DOMs (3 m spacing)

D - 40 strings (30m spacing); 120 DOMs (2.5 m spacing)

- full analysis study completed evaluating the geometry parameters (string spacing, DOM spacing, # DOMs per string) for the resultant NMH sensitivity

PINGU configuration
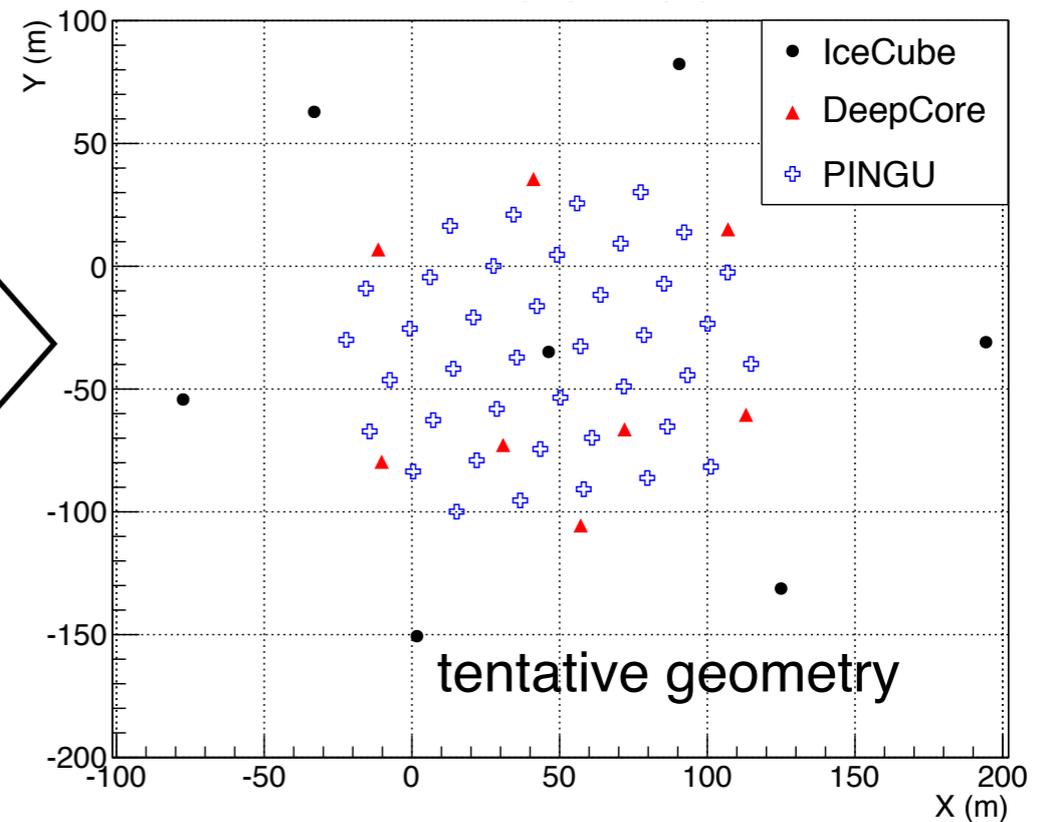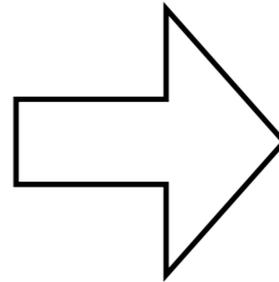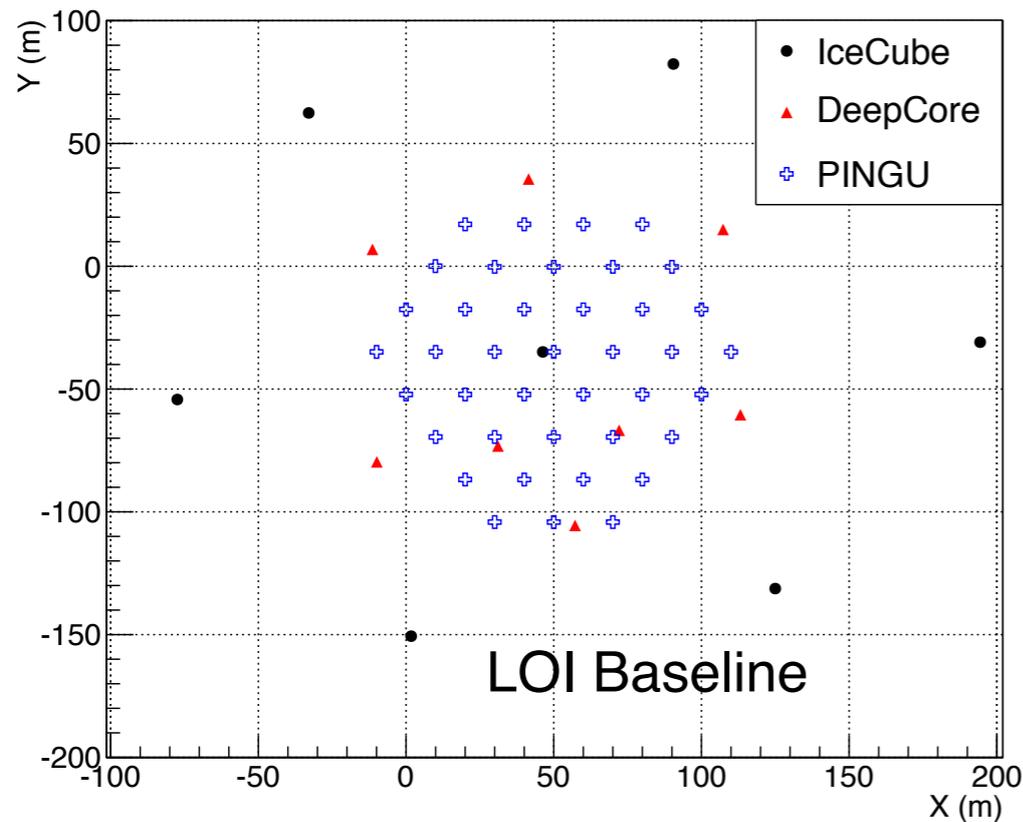
- small changes from the LOI geometry in the x-y string locations to reduce deployment challenges

- most significant change in the # of modules/string ("Halzen's Law" - deploy as much photocathode as possible in the fiducial volume); marginal DOMs on a string are inexpensive.

- tentative geometry = 40 strings (~20m ave. distance) with 96 modules/string (@ 3m spacing).

Gen(eration)2
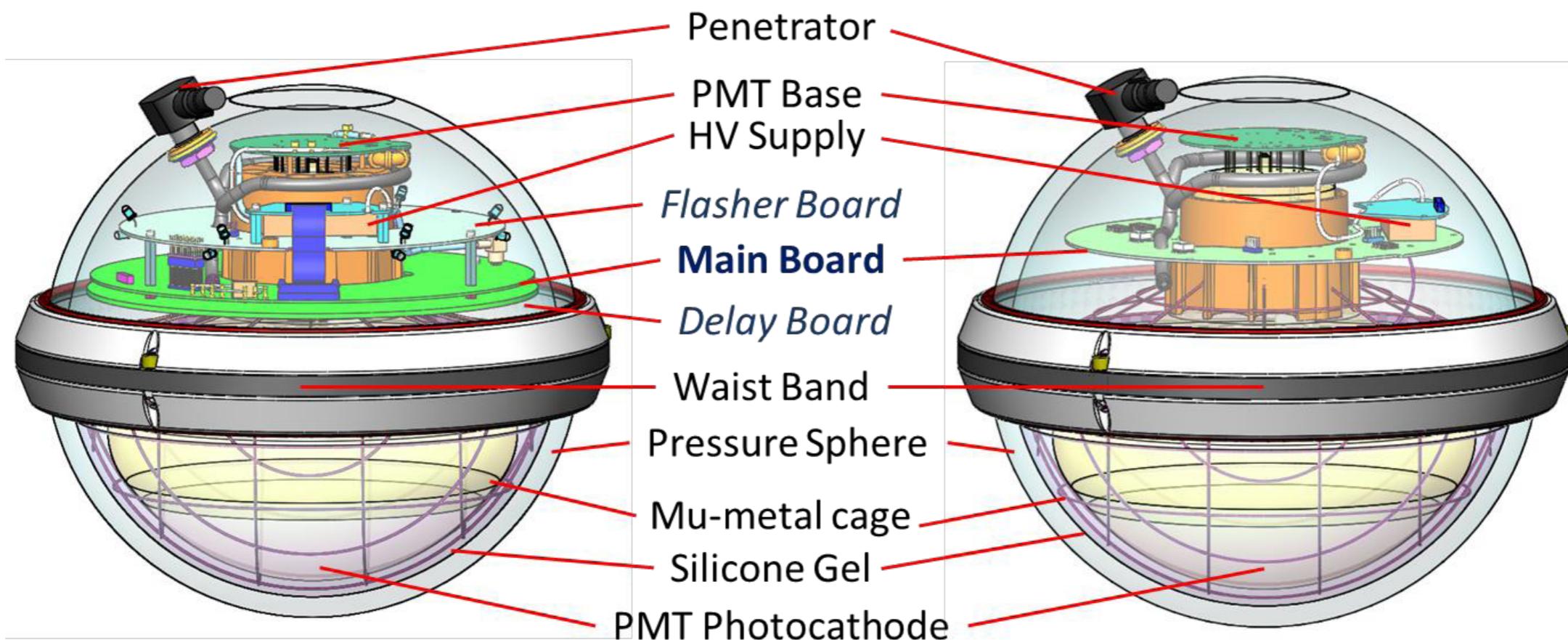
DOM   Gen2-DOM

- DOM baseline design builds from the IceCube DOM. Many of the crucial elements remain unchanged.

  - early prototyping of the new main board is underway **(See talk by John Kelly tomorrow's detector session for details)**

- redevelopment of the calibration sys/tems are in early stages **(See talk by Martin Jurkovic tomorrow this afternoon)**

- analysis is reaching full maturity **(See talks Joao Pedro Athayde Marcondes de André, Elisa Resconi, Lukas Schulte)**; anticipate many fruitful discussions this weekend.

Current envisaged PINGU timeline

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Today
Funding proposals currently under internal development and with some starting external reviews

Next month
updated LOI ready for review

Soon (late this year)
development of the US MREFC for full IceCube-GenTwo

Once the MREFC is approved (possibly 2017)
commence full procurement and construction

3 years later
PINGU deployment complete

~3 years later
Prepare to publish NMH result

⊢── physics data taking ────→

December 2013 LOI v1 released

Summary and Outlook

- PINGU continues to advance at a rapid pace; done with geometry optimization

- We are continuing to work on responses received from P5; this involves evaluating the remaining important (but time consuming) systematics

- newly incorporated systematics have not significantly diminished the PINGU sensitivity

- We are addressing the remaining questions of detector performance in the calibrations and analysis technique developments

- Our timeline (similar to ORCA/JUNO/RENO50…) remains aggressive but realistic; driven now by funding agency responses