Argo Standardized Profile Sampling: Bin Average vs Spot Sampling

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Standardized Argo Sampling

AST13 suggested that Iridium floats vertically sample at 2 dbar nominal resolution

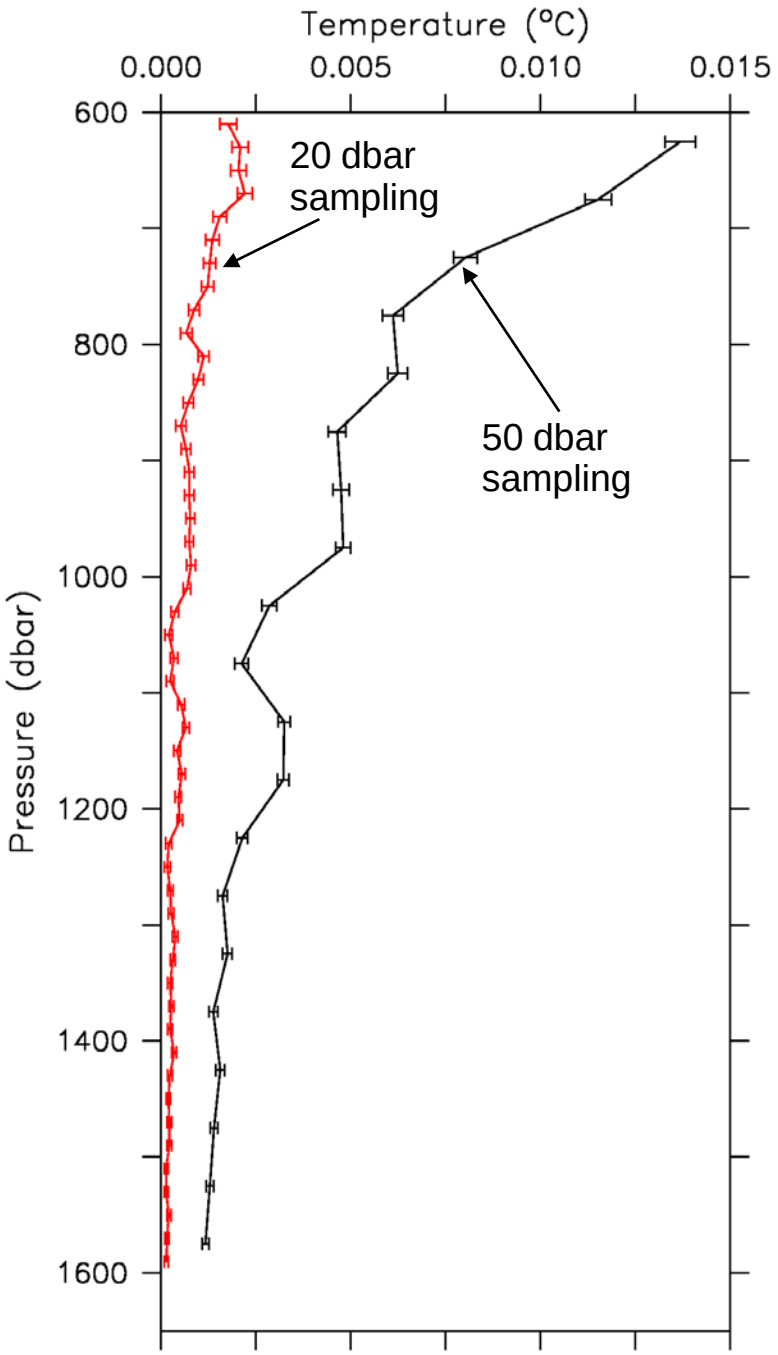
Preferable to arrive at a consensus for suggested sampling guidelines for Argo

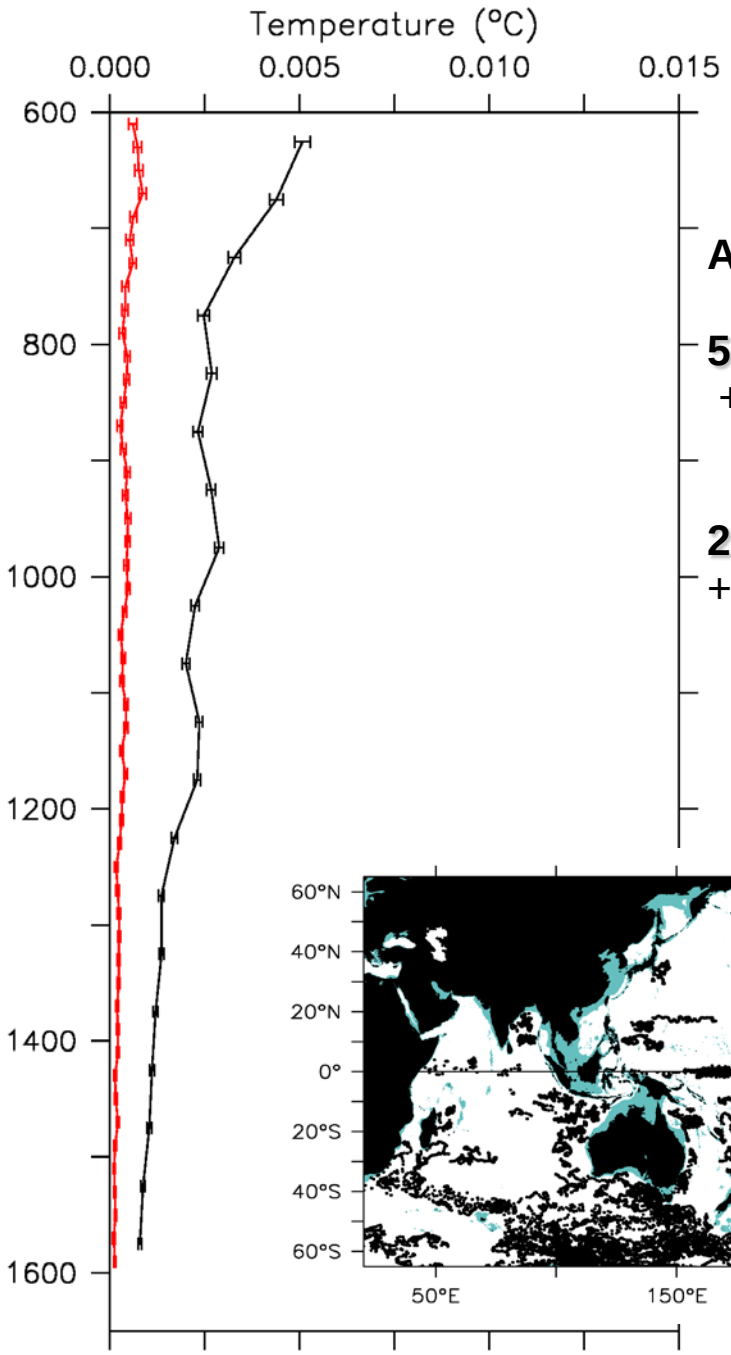
- Defines best practice for the Global Argo Mission
  - …starts to refine a data ‘metric’
- Communicates to float manufacturers what data should be delivered

Tradeoff between increased data returned and energy

- With CTD Spot Sampling, CTD on less & can rise at lower rate

Energy considerations: Riser (APEX floats) and Robbins (SOLOII floats) estimate a ~15% increase in energy expense to profile in CP mode)

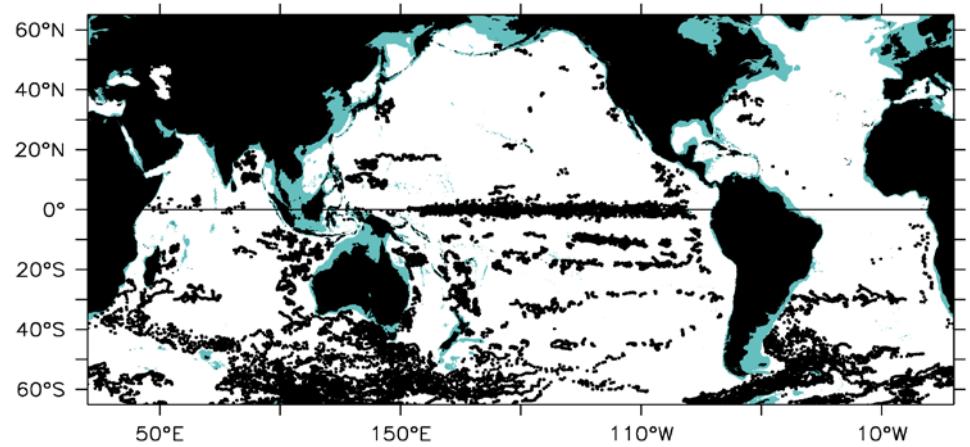




Average error > 1000dbar

50 dbar sampling
+/- 30 degree: 0.0020 °C
All: 0.0015 °C

20 dbar sampling
+/- 30 degree: 0.0003 °C
All: 0.0002 °C



stations +/- 30 degree latitude (10264)

All stations (25603)

Difference in average temperature computed depends on interpolation model

Method does not assess issue of spot sampling being consistently different (typically shallow) of target

Overall message…
Weak data metrics may lead to, only considering float lifetimes in determination of success. This may lesson the robustness of what is possible with Argo data.