

A major “DEFICIENCY” in NOAA funding of GOOS: Lack of adequate support for “OPERATIONAL RESEARCH”

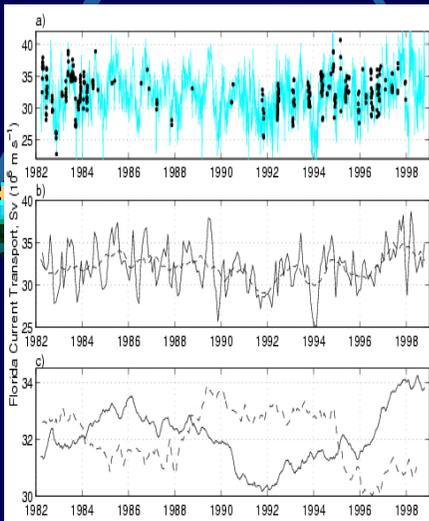
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1. What is Operational Research?

Applied research directed at improving NOAA’s ability to meet the requirements of the climate mission of the agency through improved cost-effectiveness of existing networks, establishment of indices for climatically important signals, evaluation of model use of ocean data, evaluation of effect of new observing system on climate record, etc.

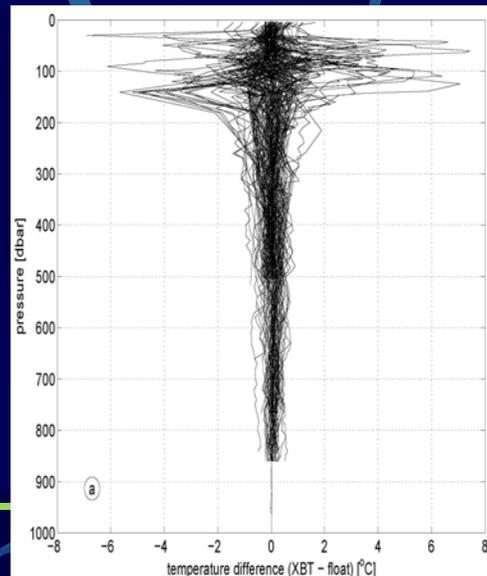
2. Examples of operational research:

- Identification of climatically important oceanic signals and development of observing methods
e.g. long-term variability in transport of Florida Current



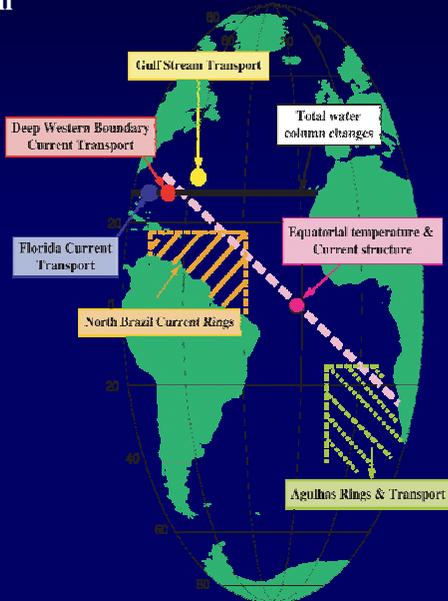
Time series of Florida Current transport inferred from the cable voltages including (a) the daily transport values (blue line), (b) the monthly average transport, and (c) the two year running means of the daily transport values (solid line). Panel (c) also includes the monthly mean NAO index (Hurrell, 1995) (dashed red line). Panel (a) includes in situ observations of Florida Current transport obtained on small boat cruises (solid circles).

- Effects of introduction of Argo floats on climate record



Temperature difference in the TROPATL between adjacent XBT and float profiles obtained within 5-days of each other. All considered profiles are within a 0.2°DEGR by 0.5°DEGR box (latitude by longitude).

- Identification of indices for monitoring of thermohaline circulation



- Analysis of forecast model rejects to determine if problem exist in observations and /or model analyses

3) Failure to support adequately operational research can result in:

- Inefficient observing networks that fail to take full advantage of combining remote and in situ signals.
- Introduction of ‘climate signals’ into historical record when new observing system implemented
- Failure to provide early warnings of climate change
- Inability to improve forecast models.