METROLOGY FOR CLIMATE ACTION
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Bureau International des Poids et Mesures

WORLD METEOROLOGICAL ORGANIZATION

Identifying necessary steps to promote agreed upon procedures of quantifying uncertainty for in-situ ocean measurements

(Christoph Waldmann)

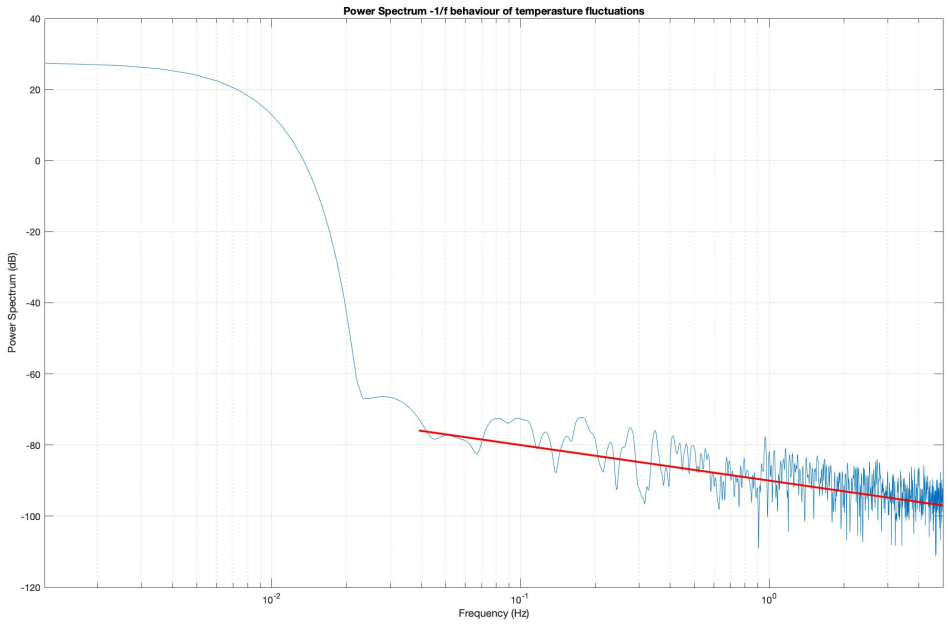
- A broader understanding has to be developed that **Metrology** is not just related to **calibration** (although cal is a great part of it)
- There is only little specific efforts dedicated towards making **use of metrological principle** (exception MINKE Project)
- An obviously needed initiative promoted by a higher level (IOC,GOOS) to **overcome barriers** across observing networks does **currently not exist**
- A **common understanding** of how ocean observations have to be understood is lacking (need for more metadata), i.e. a common vocabulary is needed (VIM)

Needs

- Ensure **comparability and compatibility** of ocean data in particular in regard to judging on long-term climatic changes
- Enhancing the use of data across observing networks by ensuring **trustworthiness**

Awareness

– Disseminate the **universal concept** behind the Guide to the Expression of Uncertainty (**GUM**) and the international Vocabulary (**VIM**)
– Clarify the current status and suggest actions to the **IOC/GOOS and WMO**



1/f Noise

Since **1/f noise** is close to **non-stationarity**, statistical analyses have to applied carefully because **the mean cannot be estimated** using averages in finite time intervals
Cited from Blender, Zhu, Fraedrich 2011