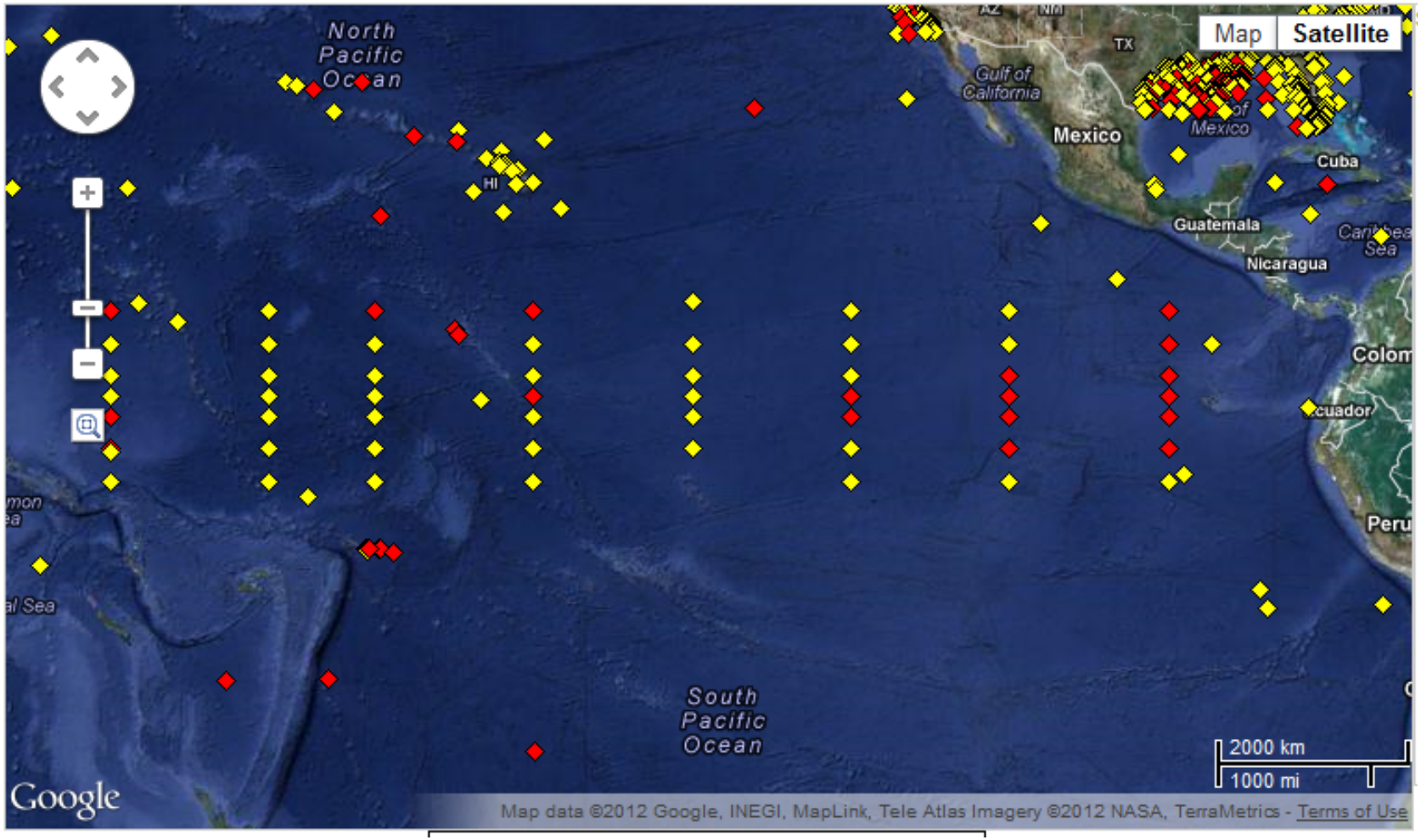
Ocean Analysis Comparison and TAO OSE

Arun Kumar

Climate Prediction Center

NCEP, NOAA

Current TAO Status



- **Existing studies are woefully inadequate to provide information in a decisional context of the return on investment for different observational platforms for ENSO prediction.**
  - **Few have focused on prediction beyond equatorial ocean thermal properties.**
  - **They do not address robustness of their findings (which can be addressed partly through use of multiple models - significant uncertainty will still exist because of the shortness of Argo record).**

- **A more comprehensive, and a better coordinated effort to assess the relative merits of Argo vs. TAO vs. other observing systems is required to judge their utility for ENSO prediction (caveat emptor… see previous bullet)**
  - **Because of significant model biases, there is a limit to what models and OSEs can tell us (we need to better understand that limit). Quantifying the contributions / impacts of specific buoys, lines, instruments, and suitability to address specific thresholds may be beyond the capability of current tools and models.**
- **To advance our knowledge, a multi-model OSE endeavor is required (necessitating buy-in and commitment outside of NOAA)**
- **Quantitative studies for seasonal-forecasting is a non-trivial endeavor, requiring dedicated manpower and compute resources**
- **OSE efforts could inform NOAA and others on the value of observing systems such as TAO. Because of its multidisciplinary nature and most importantly its contributions to current and future knowledge, capabilities, and products, SI prediction OSE efforts are only one piece of information to consider regarding the value of TAO.**

- **Use of TAO by SI community**
  - **Operational coupled seasonal forecasts systems (NCEP, CMC, ECMWF, UKMET, Meteo-France, JMA, BoM, BCC,…)**
  - **Real-time ENSO monitoring**

Comparison of Ocean Analysis

- **GSOP – Ocean Synthesis products**
- **Coupled seasonal forecast systems generally have an ocean data assimilation system**
- **Connect with GSOP or promote a separate activity?**