Data mapping and inversion

Sarah Gille, on behalf of the working group

SWOT meeting 2023

Friday, September 22, 2023

Synopsis of discussion and recommendations

6 presentations

- Mounir Benkiran, E. Rémy and P.-Y. Le Traon: First comparisons between SWOT and the MOI system. Global demonstration using Mercator framework

- Joseph D'Addezio and Gregg Jacobs: Assimilative ocean modelling during SWOT cal/val and next steps. California Current 3d-Var for in situ observations and soon SWOT

- Sarah Gille, M Mazloff, A Verdy, B Cornuelle, G Gopalakrishnan: California Current CalVal state estimation using the MITgcm, Califprnia Current 4d-Var demonstration

- Maxime Ballarotta, C. Ubelmann, G. Meda, A. Tréboutte, Y. Faugere, G. Dibarboure and R. Fablet: Experimental Mapping of Ocean Surface Topography using SWOT Altimetry: Ongoing and Future Studies, Suite of methods including 4dVarnet at regional scale with aim to take global

- Shafer Smith, Q. Xiao, D. Balwada, C. S. Jones, M. Herrero-Gonzalez, R. Abernathey, Learning non-wave surface divergence from sea surface height using neural networks, Neural net strategy to evaluate dynamics

- Valentin Bellemin-Laponnaz, Emmanuel Cosme, A. Stella, F. Le Guillou, S. Metref, C. Ubelmann, A. Barboni: High-resolution Sea Surface Height mapping with assimilative simple models: status and plans, Multiple light-weight QG+ mapping/assimilation frameworks

Discussion themes

- Interest in collaboration and comparison of methods. Framework developed in Grenoble to support comparison efforts
- Regional comparison domains could grow from AdAC (and regional assimilation priorities
  - California Current crossover
  - Gulf of Mexico
  - Mediterranean
  - Everywhere else
- Need to bring groups together to support collaboration via working group efforts, data challenge, collaborative efforts
- Support for open software/open data approach (more discussion this afternoon)