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Observational inputs to the numerical models of tsunamis: a naïve wish list

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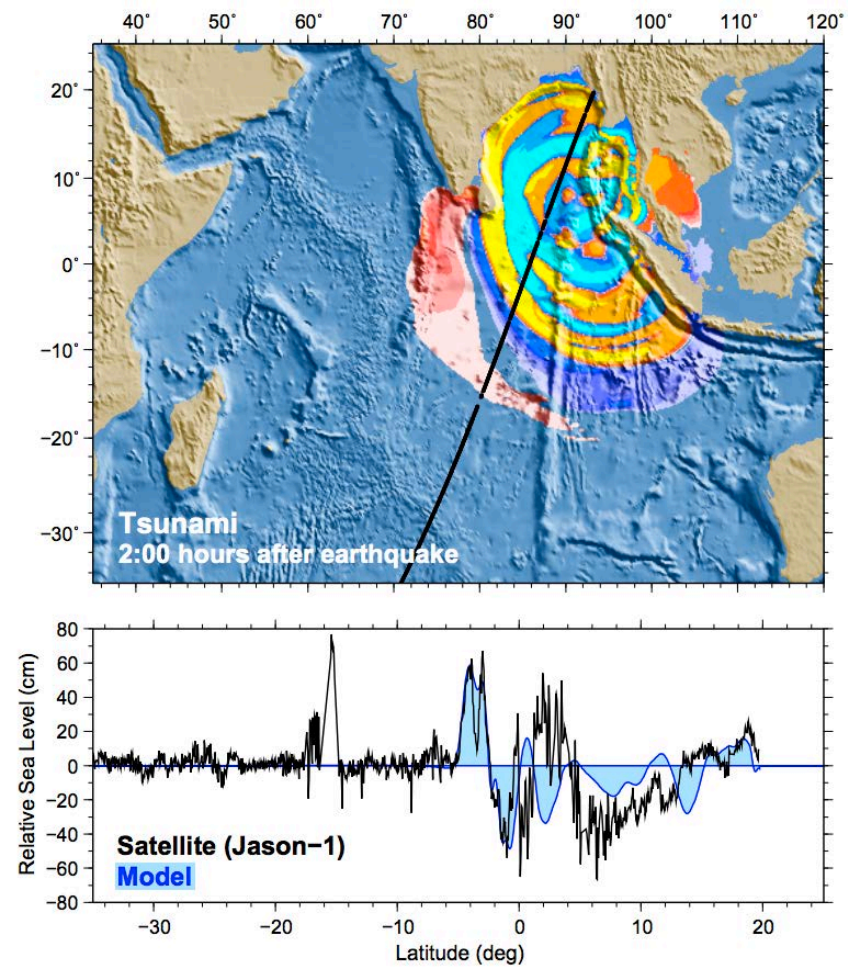
Satellite observations and tsunamis

- Direct observations of tsunamis
- Observations of the tsunami model domain
  - large scale
  - Small scale (coastal)

Direct observations of tsunamis

- Propagating tsunamis can be detected through altimetry.
- Observations of opportunity only.
  - Verification of models.
- In the future, perhaps this could be used for forecasting?
  - Coverage.
  - Timeliness.



NOAA

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Tsunami model domain

- Operational tsunami models are not run in real-time.
  - Forecasts are based on scenario databases.
- Static domain.
  - No account for seasonally varying ice-sheets.
  - Fixed polar boundary.

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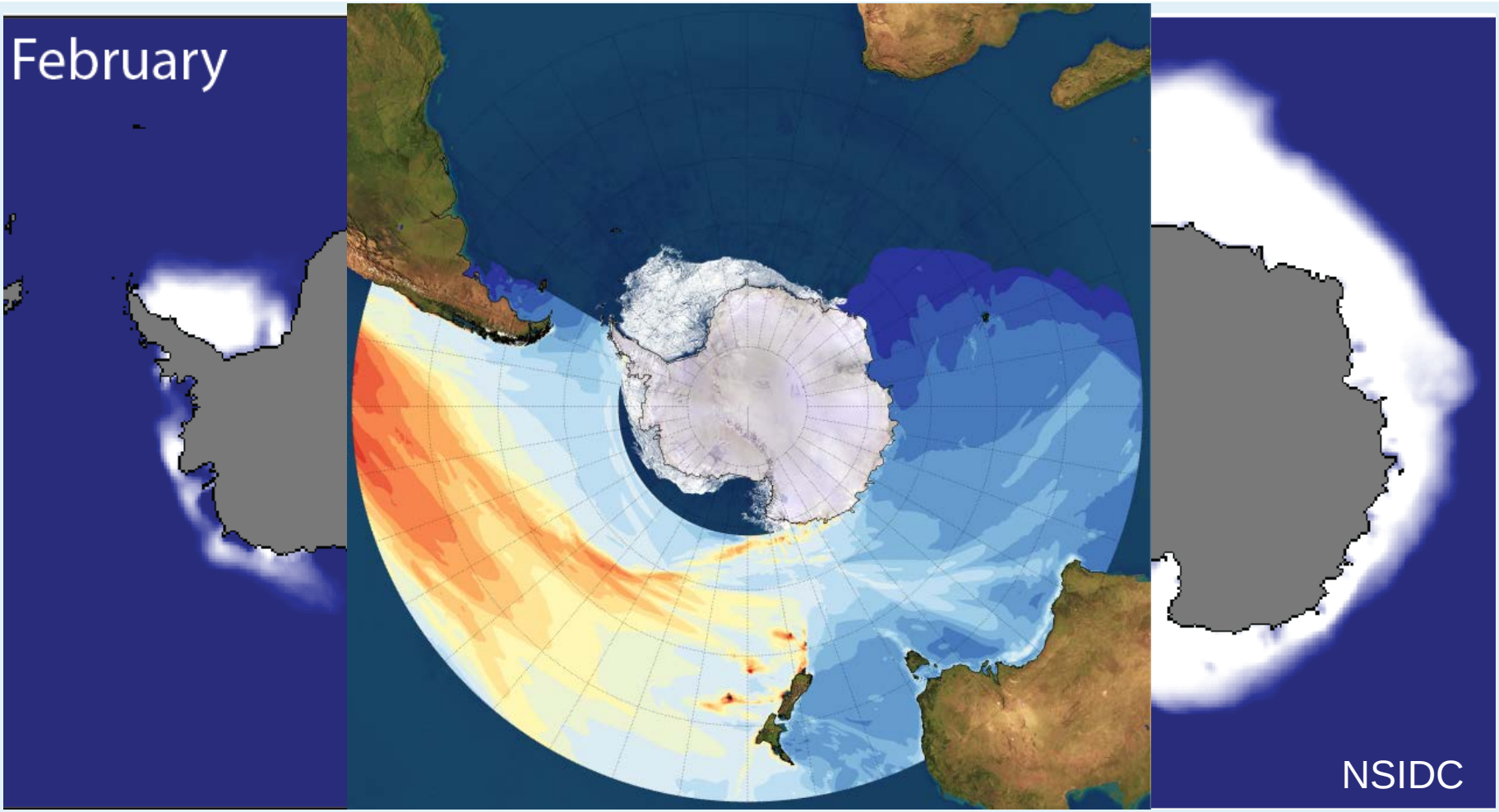
Tsunami model domain



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Tsunami model domain

- Advances in technology mean real-time tsunami forecasting is now possible.
- A knowledge of sea-ice extent/concentration/boundary is needed.

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Coastal bathymetry and topography

- Near shore and coastal tsunami models are sensitive to bathymetry.
- Terrestrial collection is expensive and requires regular updating.
- Space-based measurement could augment conventional collection methods (eg. Ship-based sonar, Lidar).
  - Resolution needs to be sufficiently high.