

# What is the 4D inventory of sediment erosion, transport, deposition, and diagenetic pathways in subduction zones?

Required data sets:

- Global comparative database of sediment types, thicknesses, and distributions
- Exhumation and erosion rates
- Geochronology, thermochronology,
- Define source areas and provenance
- Seismic imaging
- Existing or planned boreholes
- Heat flow measurements
- Diagenesis, fluid flow, compaction, etc.
- High-resolution topography and bathymetry

## Thematic approach:

- Global compilation and comparison of existing sediment data
  - ODP data, etc.
- Linking geodynamic and geomorphic modeling
  - e.g., , facilitate connections between Center for Computational Geodynamics and Community Surface Dynamics Modeling System (CSDMS)

## Site approach:

4D inventory at specific site(s)

- Site needs: 1) sediment
  - variation in sediment thickness
  - variation in sediment source areas
  - forearc basin with a long-term record of volcanic, climatic, eustatic and tectonic processes
  - existing backbone geophysics, geologic mapping, geochronology, ***existing or planned boreholes***

## **Potential primary sites:**

- Cascadia, Alaska, New Zealand (not ranked)
- This analysis could be accomplished at many potential sites as long as it meets specified site needs