Disaster Management

Q2) Are there any software tools to be provided that are essential and commonly used for the ALOS data applications in this research field. The tools should be currently unavailable in the commercial or public domain software market, and dedicated to use ALOS data.

- **open sample data** sets for interferometry - L1.0 and L 1.5, FBS and FBD
    Hawaii
    Long strip ~ 7 images in standard frame format, perhaps Northern
    California to Washington State

- **interferometry software** - (a variety of softare exists ranging from free and
        unsupported to purchased with support.)
        beginners guide to ALOS intereferometry
        PRF interpolator

- **optical software** RPC -Model software is good but not open source or free

-provide expert capability for AUIG **guest searches**
        (available now - **thank you!!** guestid = GUEST999 pw = AuigV2.0
            or
- JAXA could **send complete catalog** to data nodes every week??

Disaster Management - Short Answer

Q1) Are there any common observation requests essential for this research field, such as observations on the common test sites or observation modes for the common applications. Please specify them with reasons if they exist.

Yes - Hawaii

The big island of Hawaii is a good place to develop InSAR methods.

> There is a range of vegetation to examine temporal decorrelation.

> There is a lot of topography to understand topographic effects.

> There are highly active volcanoes to provide good tectonic signals.

> There is a large open GPS array for ground truth.

> The island is isolated to minimize conflicts with other acquisition plans.

Needed:

> Frequent acquisitions on both ascending and descending tracks using a variety of look angles.

Disaster Management - Long Answer

Q1) Are there any common observation requests essential for this research field, such as observations on the common test sites or observation modes for the common applications. Please specify them with reasons if they exist.

Yes

If something changes in the ALOS mission such as an increase in downlink capability or an instrument failure, the disaster group has some recommendations.

Need to do a study to identify the highest priority areas based on some criteria:
  high strain or probability of signal
  high risk to population
  not available to C-band interferometry - e.g., outside of the ENVISAT background mission.

Disaster Management - Long Answer

Q1) Are there any common observation requests essential for this research field, such as observations on the common test sites or observation modes for the common applications. Please specify them with reasons if they exist.

Subduction/Volcanic arcs, especially in populated areas

Only need to image known active volcanoes. Disaster group could provide a detailed list for JAXA. Not accessible to C-band; Cameroon line for example. Isolated Island.

Need both ascending and descending look directions to separate horizontal and vertical. At least one descending coverage each year?
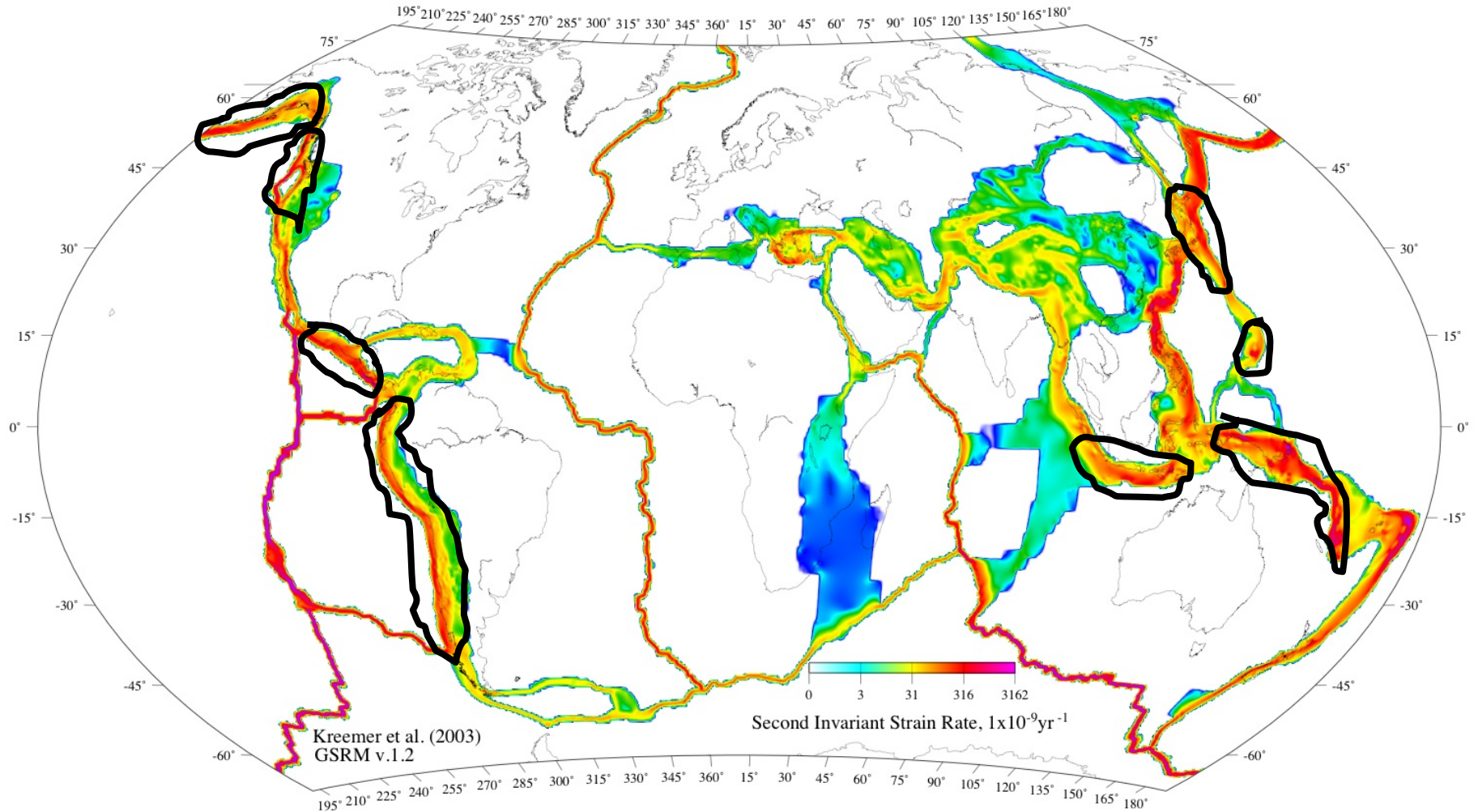
Continental Transform Faults, especially in populated areas

Sumatra Transform Fault - Java
North Anatolian Fault Zone - Turkey
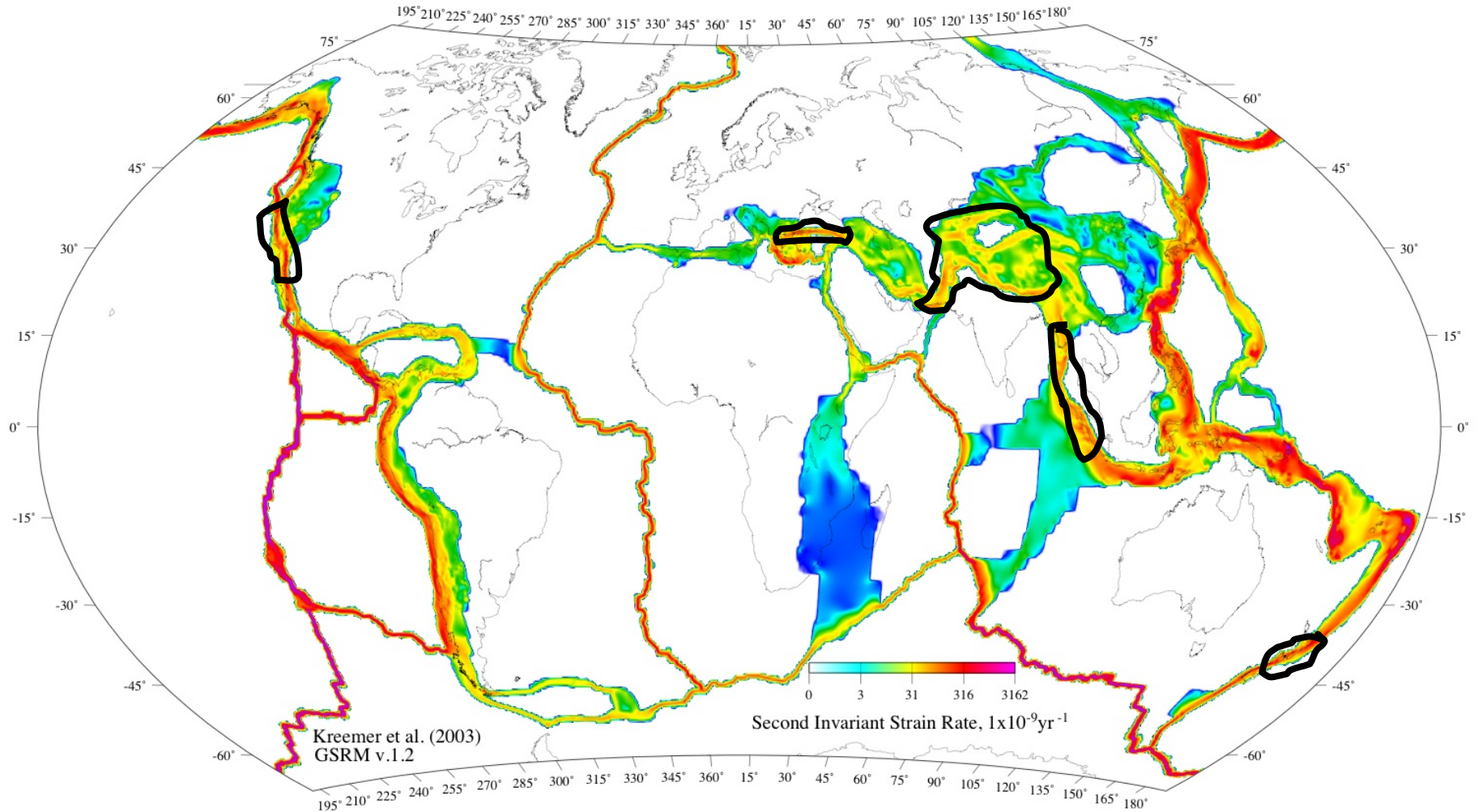San Andreas Fault - US
Alpine Fault - New Zealand

Mainly need track that is most perpendicular to fault for interseismic monitoring.
Need both ascending and descending for coseismic events.

Natural Laboratories - Subduction/Volcanic Arcs

Kreemer et al. (2003)
GSRM v.1.2

Second Invariant Strain Rate, $1 \times 10^{-9} \text{yr}^{-1}$

0   3   31   316   3162

Natural Laboratories - Continental Transform Faults and Mountains

Kreemer et al. (2003)
GSRM v.1.2

Second Invariant Strain Rate, 1x10⁻⁹yr⁻¹

0   3   31   316   3162

Disaster Management - Long Answer

Q1) Are there any common observation requests essential for this research field, such as observations on the common test sites or observation modes for the common applications. Please specify them with reasons if they exist.

Landslides

How do we identify the most important landslides?
Are multi-temporal optical methods the best approach?

Need both look directions to see all slide orientations.

Need landslide mask of areas where we could learn something new.

Mining Subsidence

How do we identify all the mining and groundwater subsidence sites?

Need frequent (?) acquisitions once a site is selected.
Only need one look direction because motion is vertical?
SRTM sometimes not high enough resolution or not current?