

Plan

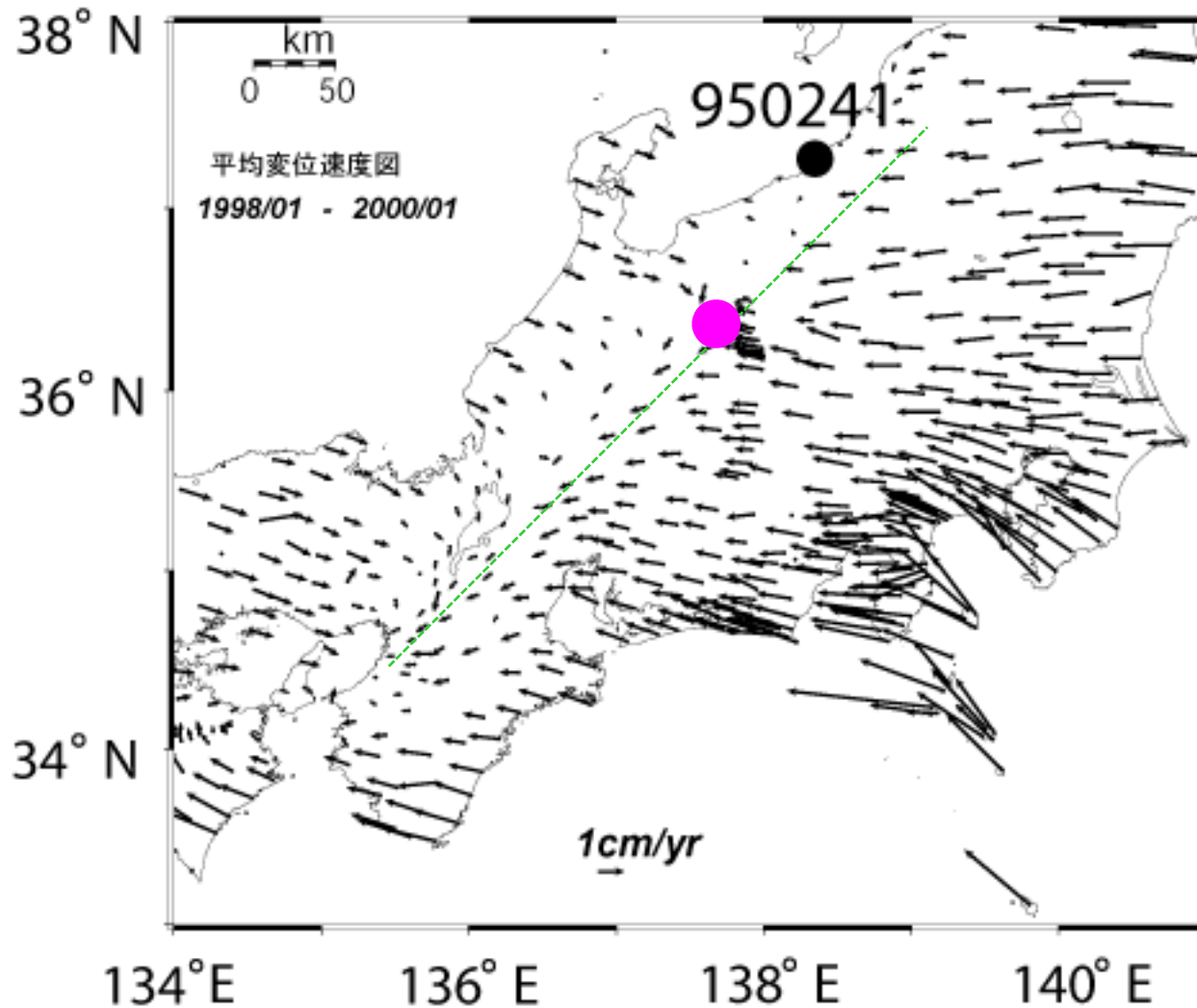
1. Two baselines along LCGT
2. Length ... may be shorter than LCGT
(cf. Vali et al.:1020m, PFO : 800m)

Purpose and Targets

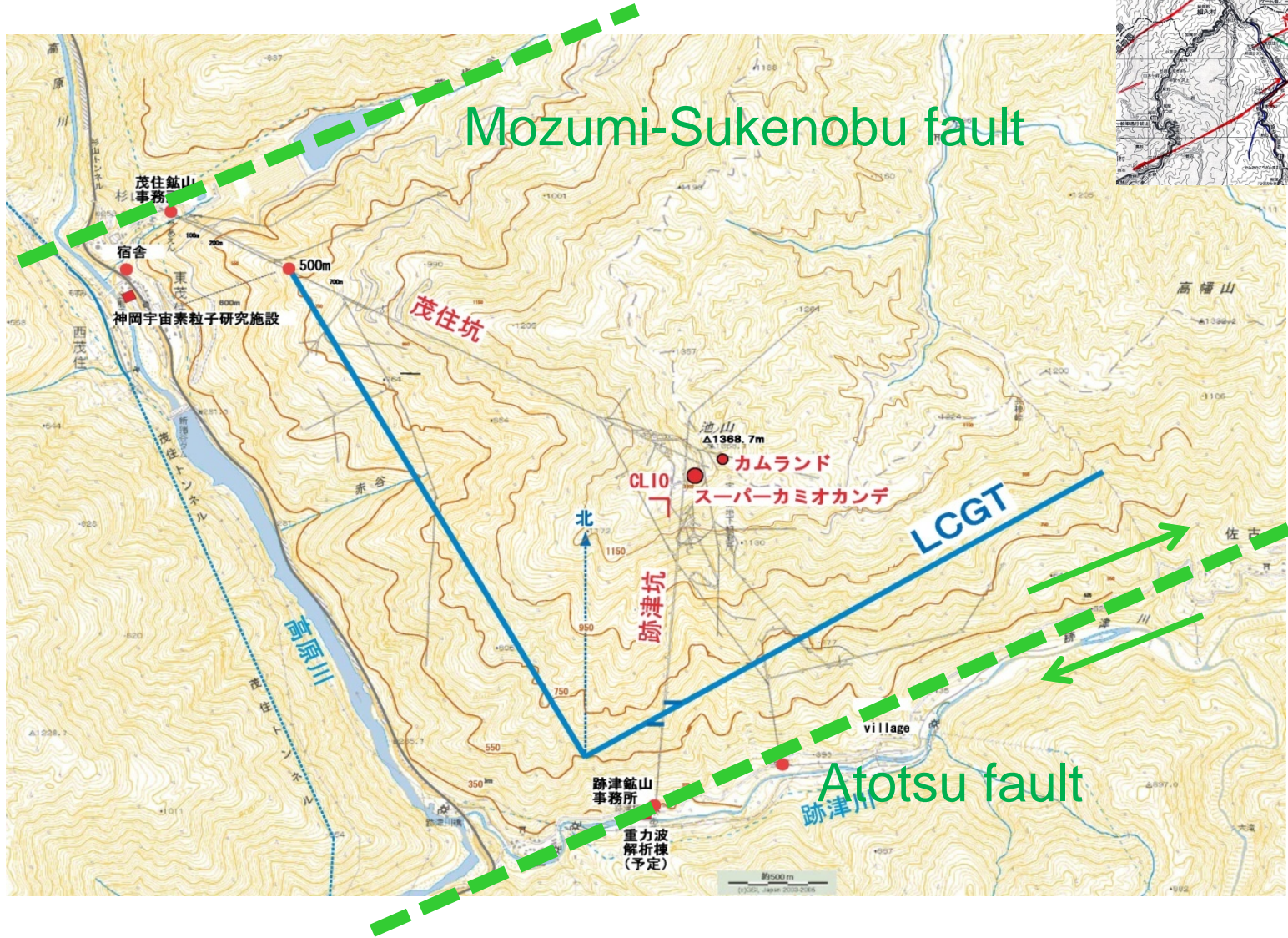
1. Baseline monitor for LCGT
(Tides, earthquakes, crustal deformation...in the middle of **Niigata Kobe Tectonic Zone**)... need for strain monitor.
2. Fault-creep monitor for the Atotsu fault
(Parallel observation with seismometers and GPS)
3. Deep interior of Earth
(Monitoring Earth's free oscillations. Continuous data required.)
4. Standard of length (collaboration with AIST)

Niigata-Kobe Tectonic Zone (NKTZ)

(Figure: Geospatial Information Authority of Japan)



LCGT baselines and fault locations



Seismicity around the site

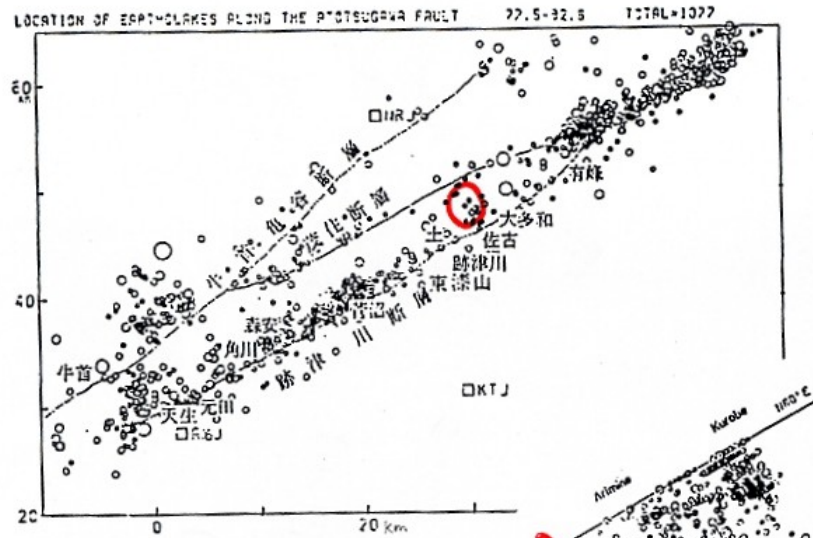


図3 跡津川断層周辺の震央分布

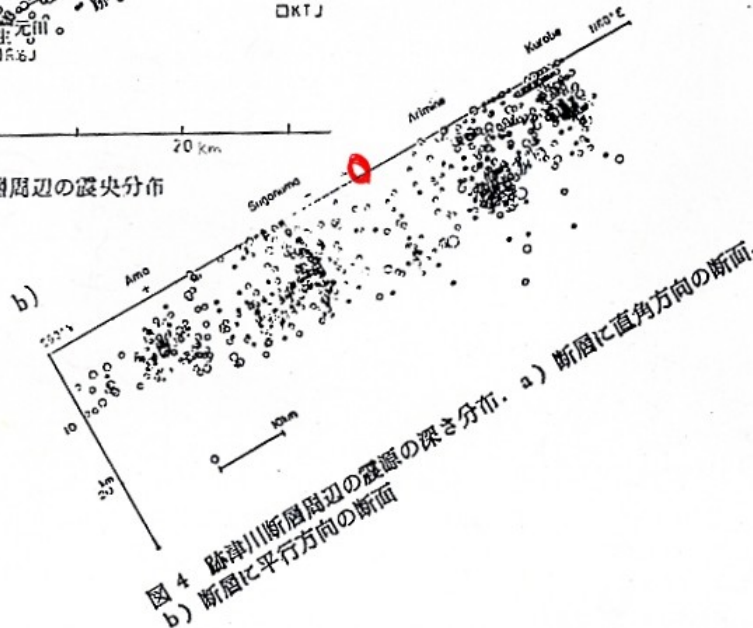
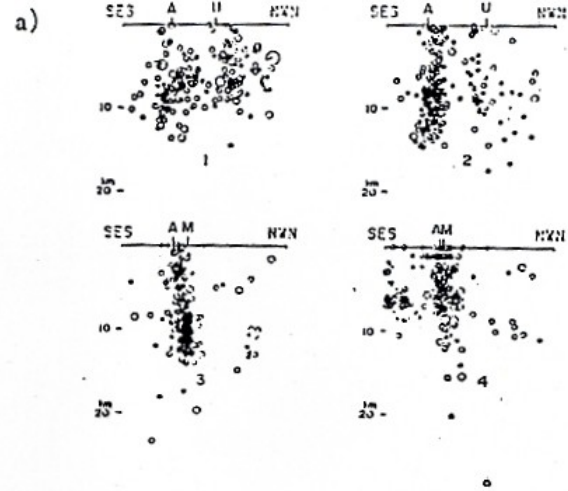
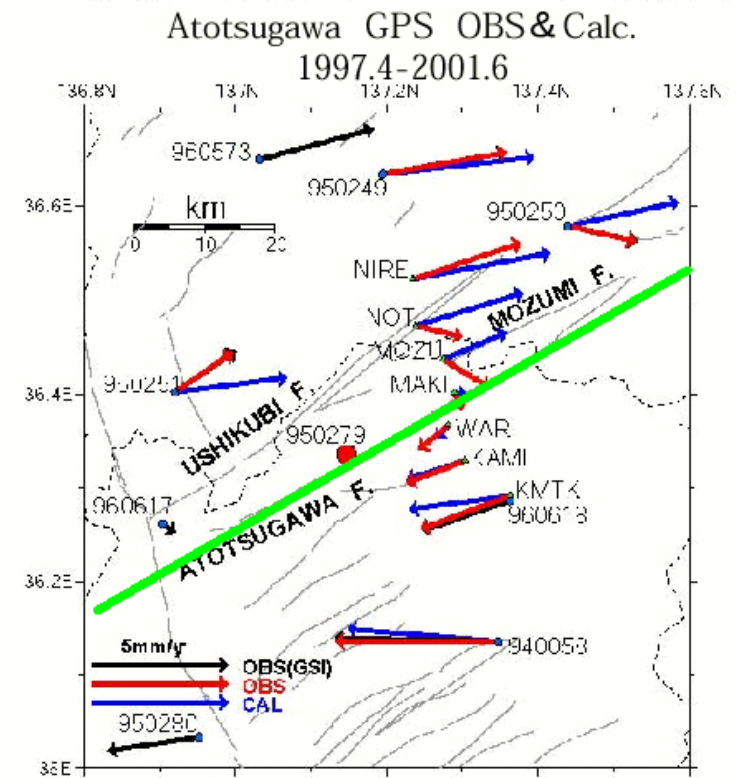
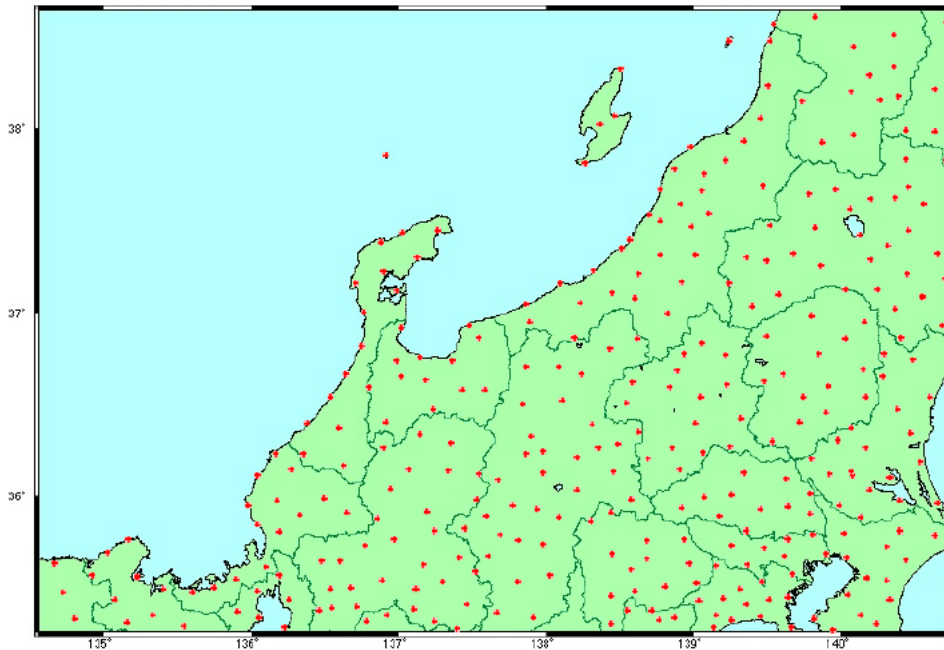


図4 跡津川断層周辺の震源の深さ分布. a) 断層に直角方向の断面, b) 断層に平行方向の断面



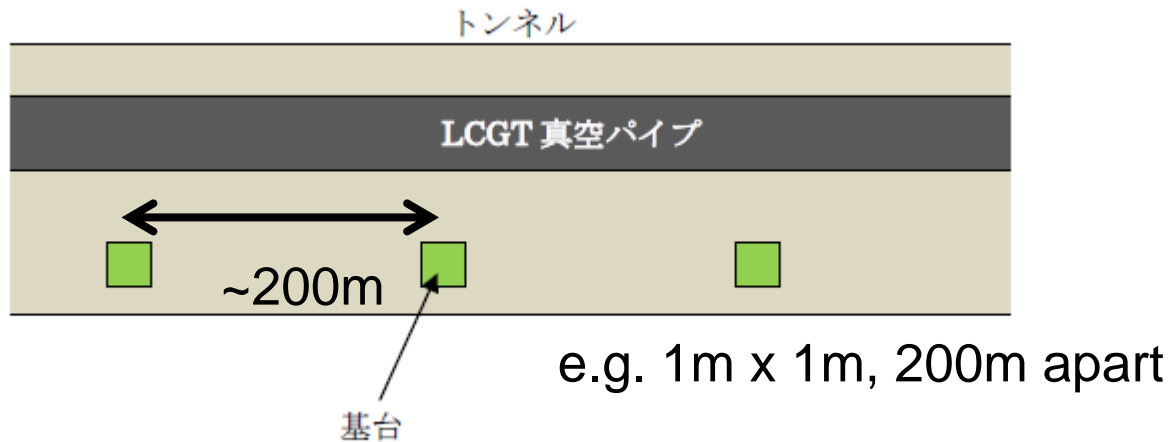
Creeping ?

GPS network and observed crustal movement



Some considerations

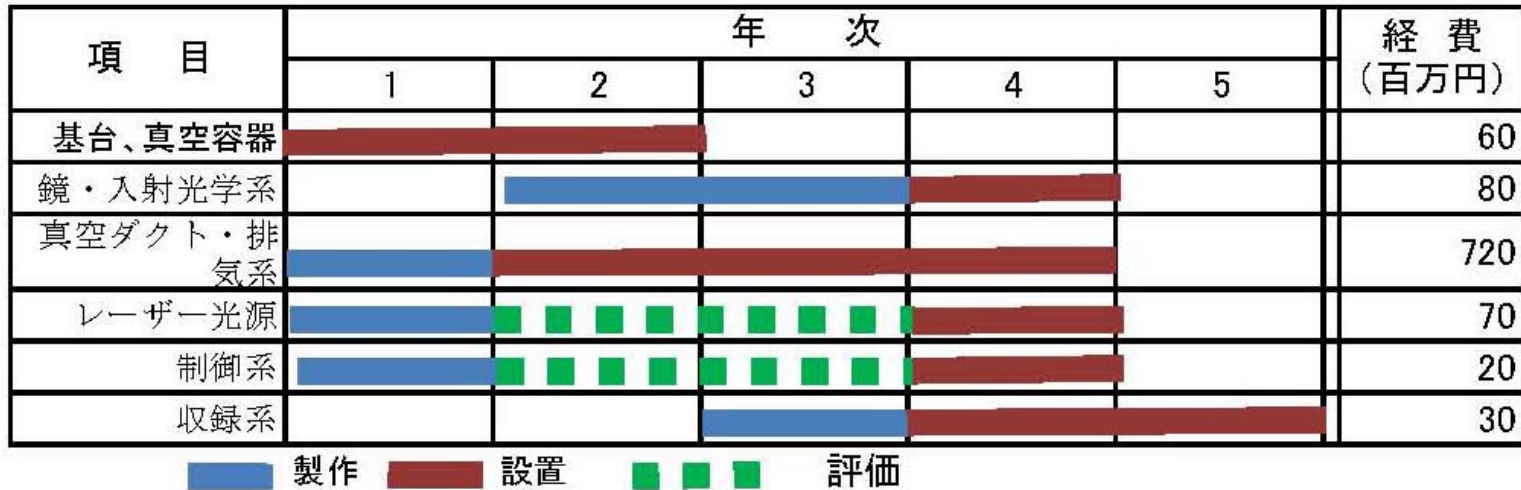
Rigid bases (e.g. granite bases attached to the bed rock) are useful as installation references and geophysical / standard benchmarks.



- Rigid bases are similar to a base of 100m-strain-meter in CLIO (see photo). Those levels are as same as floor or little lower than floor. The bases are made of granite, about one meter square and fixed on bedrock.
- The bases align almost straight and parallel with vacuum pipe of LCGT.
- It's better that the bases are at intervals of less than 200 m.
- By measuring the positions of the bases correctly, LCGT vacuum pipe can be align as the reference of the bases in LCGT vacuum system construction. And also the distance between center-tank and end-tank can be obtained.
- After the construction, the bases are useful to baseline monitor for LCGT, fault-creep motion for the Atotsu fault, deep interior of Earth and standard of distance.

Components and schedule

... may be adjusted to new LCGT plan



Detection method (either or step up)

1. Scaling up the current 100-m system (a laser strainmeter).
2. Absolute-length design (both absolute and relative strainmeter)
... based on the current system, but some R&D required.

Granite base of the 100-m strainmeter in CLIO

