

Analyses on crustal deformation using Geonet data (1) - Northeastern Japan -

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We investigated crustal deformation in northeastern Japan using Geonet data. Following is the summary of the analyses:

1. Strain in the east-west direction is compressive in the whole district, and it is large on the side of the Japan Sea, especially in the coasts of Yamagata and Niigata Prefectures. The east-west compression is also strong in the Sendai-Honjo tectonic belt compared to that in the regions to the north and south of the zone. Deviation of the strain field in each year from the average one shows a spatial pattern in which the equi-value lines are extended to the north-south direction, and a tendency of progression of the phase from the east to the west is recognized.

2. Strain in the north-south direction is small compared to that in the east-west direction. A noticeable feature is that the strain is extensional in the Sendai-Honjo tectonic belt to the west of the Ojika Peninsula.

3. Areal strain in the Tohoku district takes negative values, and it is large along the coast of the Japan Sea.

4. The maximum shear strain is large along the coast of the Japan Sea as already pointed out by Sagiya et al.(2000), and it is noticeable in the Sendai-Honjo tectonic belt as well.