

Groundwater and crustal activity observations in Gifu Pref., Central Japan

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In order to investigate the relationship between groundwater and crustal activity observation, Tono Research Institute of Earthquake Science has installed the multi-component borehole instruments at the bottom of nine borehole sites in Tono Region, Gifu Prefecture, Central Japan.

We investigated the strain and groundwater level changes observed at TGR350/165 borehole site which are located at vicinity of Mizunami Underground Research Laboratory (Japan Atomic Energy Agency Tono Geoscience Center).

The following results were obtained:

- 1) Crustal strain changes (10^{-6} order) associated with pore-pressure disturbances which are produced in Mizunami Underground Research Laboratory.
- 2) Direction of Maximum shear strain changes of TGR350 are SSE direction in case of groundwater level UP, and NNW direction in case of groundwater level drop. At the TGR165, Direction of Maximum shear strain changes are NW direction in case of groundwater level UP, and SE direction in case of groundwater level drop.

We will present the detail of above-mentioned result and qualitative model of strain changes due to groundwater changes.

Keywords: Ishii-type borehole strainmeter, Relationship between groundwater and strain, Maximum shear strain change, pore-pressure disturbance