

Mechanism of induced earthquakes of the 2011 Off Pacific coast of Tohoku Earthquake according to aftershocks activity

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Many induced earthquakes occurred after the Off the Pacific coast of Tohoku Earthquake in 2011. According to the GPS-network measurement, the Northeast Japan expanded more than 5m to the east. This means that a tensional stress affected to the upper crust and the stress field of the upper crust of Northeast Japan would be reduced. So, the fluids occurred in the lower part of the upper crust, and uplifted into the upper part of the upper crust. This is causing the induced earthquakes.

Keywords: induced earthquake, mechanism, hypocentral distribution, geologic structure, reduced stress, uplifting by fluid