

Low-frequency earthquakes in Aichi Prefecture and crustal strain changes at TYE station of AIST on January 2006

Yuichi Kitagawa[1]; Norio Matsumoto[1]; Naoji Koizumi[1]

[1] GSJ, AIST

Introduction

Low-frequency earthquakes occurred in Aichi Prefecture on January 2006. At the same time, there were changes in crustal strain by multi-component borehole strainmeter at TYE station of AIST in Toyohashi city, Aichi Prefecture. In this presentation, we will report the characteristics of the crustal strain changes.

Observations

Low-frequency earthquakes occurred at northeastward region from Chita Peninsula in Aichi Prefecture since January 16, 2006 and then occurred at further northeastward region from January 18 to 22, 2006. At the same time, the crustal strain at TYE station also changed. The changes of strain components were as follows. N131E component of horizontal strain had 1×10^{-7} contraction from January 15 to 22, 2006. N221E component of horizontal strain had 1×10^{-7} extension from January 15 to 22, 2006. N356E component of horizontal strain had 3×10^{-8} contraction from January 18 to 22, 2006. N86E component of horizontal strain had 2×10^{-8} contraction from January 15 to 18, 2006 and then 3×10^{-8} extension from January 18 to 22, 2006.

Discussions

This crustal strain changes were equivalent to the strain field with the maximum contraction in the NW-SE direction and the maximum extension in the NE-SW direction. The direction of the maximum contraction was N305E from January 15 to 18, 2006 and then N325E from January 18 to 22, 2006. The change of the direction seemed to be correspondent to the migration of hypocenters of low-frequency earthquakes.

On July 2005, low-frequency earthquakes occurred in Aichi Prefecture and the crustal strain at TYE station also changed. It is interpreted that the crustal strain changes on July 2005 were caused by a short-term slow slip on a plate boundary under Aichi Prefecture. It is thought that the crustal strain changes on January 2006 were explained by a similar short-term slow slip on a plate boundary under Aichi Prefecture.