Atmospheric effects on strain and tilt changes at the 800m borehole on Awaji Island

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The 800m borehole at Toshima is located about 500m southeast of Nojima fault on Awaji Island. Routine observations of crustal activity based on a scientific drilling program have been performed at the 800m borehole since May, 1996 by employing a multi-component borehole instrument. Crustal movements due to atmospheric pressure changes were calculated by applying the least square method to the observational data of strain, tilt and atmospheric pressure. The high atmospheric pressure resulted in the contraction of the crust. Direction of the principal strain was N60E-S60W. Maximum subsidence occured in the direction of N25+-15E at the high pressure. The characteristics of the atmospheric effects were varied in December,1996 because of modifications of the observational system.