Seasonal variation in the records at Sukumo observatory near Bungo channel, southwest Japan

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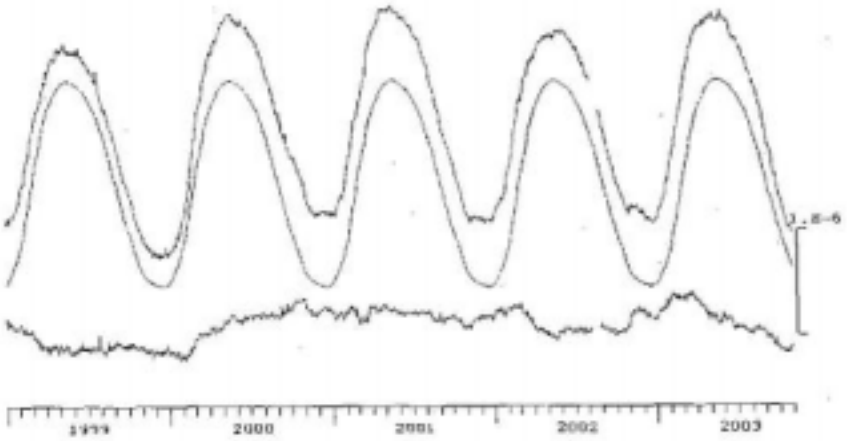
Sukumo observatory is one of stations in the observation network of crustal activities around the Hyuganada region in Kyushu, where the baseline length of the instruments is shortest in the network and the length of the observation vault is shorter than the other stations. The overburden is too thin and the distance to the entrance of the vault from the instrument site is too short to avoid the influence of the atmospheric temperature variation to the observed records of ground-strains and ground-tilt. Therefore regular seasonal variations are distinguished on records of all components of the strainmeters and watertube tiltmeter at Sukumo observatory.

Slow slips have been reported several times, from 1996 to 1997 and since last summer, in the crust under Bungo channel. Sukumo observatory should situate in the strained region caused by these slips. But the discussion on the slip could not be developed precisely from these data at Sukumo station without removing the seasonal variation.

We analyzed the seasonal component in these records as function of atmospheric temperature inside and outside the vault and barometric pressure and tried to extract signals of the crustal strain from original data. The seasonal variations of the temperature in the observation vault delay 94-143 days refer to outside one. Most amount of the seasonal variation in the strain change is explained by these data.

RRCSKE1
RRCSKE1sm
RRCSKE1sc



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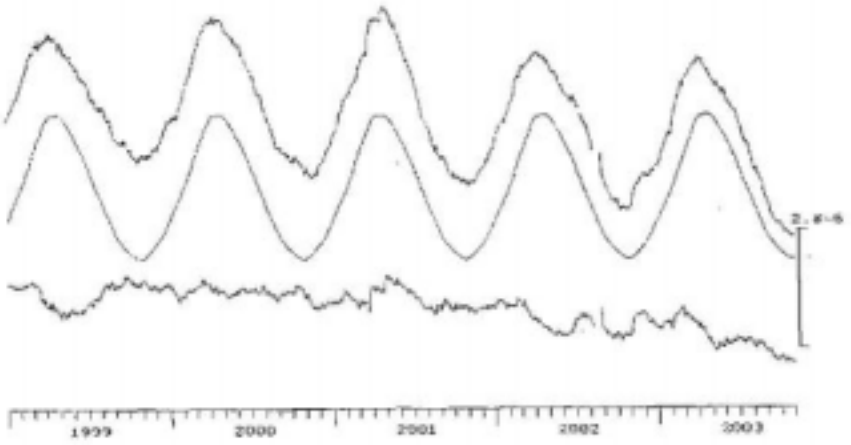

RRCSKE3
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