Observations of Seismic, Gravity, Magnetic, Radon and Water Level Data at Gujarat MPGO in Kachchh

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Institute of Seismological Research (ISR) has established a network of four Multi-parametric Geophysical Observatories (MPGO) at Bhachau, Vamka, Desalpar and Badargadh in Kachchh which fall in the aftershock zone of 2001 Bhuj earthquake (Mw 7.7) for earthquake prediction research. A very sensitive dual sphere superconducting gravimeter (SG) is installed in March 2009 at Badargadh. Some large and moderate earthquakes are well recorded in SG records. Continuous record of about one year gravity changes show the dominating effect of earth tides and atmospheric pressure. Co-seismic changes have also been observed during earthquakes of Mw $\geq$ 4 within periphery of 80 km from Badargadh.

Two Magson digital fluxgate magnetometers have been installed on February 07, 2009 to observe the magnetic precursors, if any in earth's magnetic field components at Desalpar and Vamka. The daily variations of geomagnetic horizontal and vertical components are being observed. Variations of about 2-9 nT in vertical component have been observed during earthquakes of Mw $\geq$ 4 within periphery of 65 km from Vamka and 80km from Desalpar.

Five radon sensors have been at four MPGO sites and one at Chobari during February to April 2009. A strong radon anomaly at Vamka and Chobari sites has been observed 7 days before Mw 4.1 earthquake of 12 April 2009 which is at a distance of 29 km W from Vamka and 23 Km SW from Chobari.

Five Madofil II water level recorders have been installed to 50m depth during 2009-2010 in Kachchh active area within 60 km N and NE of 2001 Bhuj earthquake epicenter. No significant change in water level is observed except daily fluctuations of 2-3 cm.