



## **Vibro seismic monitoring of the seismic active central part of Baikal rift zone**

**V. Kovalevsky** (1), G. Tatkov (2), S. Tubanov (2), A. Bazarov (2)

(1) Institute of Computational Mathematics and Mathematical Geophysics SB RAS, (2) Geological Institute SB RAS (kovalevsky@sscc.ru / +7(383)3308783)

Vibro seismic monitoring of the seismic active central part of Baikal rift zone is carried out since 2004 with the use of the vibrator CV-100 located on geophysical observatory "Souhoi Rouchei" near the shore of lake Baikal. The vibrator operates one night every month and radiates the harmonic signals with the frequencies of 7.0 Hz, 8.0 Hz and 9.0 Hz and duration of 10 minutes. The control system of vibrator provide the stability of the parameters of radiating signal about 4 percent ( or 14 degrees) for phase and 1 percent for amplitude. The synchronization errors of the systems of radiation and recording are not exceed 1 millisecond. The procedure of complex averaging-out with 4096 points window are used for calculation of a phase and amplitude of the monochromatic signal. The records of the seismic stations of the local network are used for the determination of the amplitude-phase characteristics of coherent radiation of the vibrator CV-100. Seismic stations "Khuramsha", "Turuntaevo", "Tirgan", "Ongureni", "Zakamensk" have the highest signal-to-noise ratio for the harmonic signals on South Baikal region and provide the precise determination of the small variations of the signal parameters. The smooth decrease of phases and increase of amplitudes in summer season are allocated for the first time by means of long-term observations. These fluctuations have cyclic (seasonal) nature. It confirms necessity to take into account the annual variations of amplitude-phase characteristics of stationary vibroseismic field when the geodynamic processes are investigated by the methods of vibroseismic interferometry. The structured database of monitoring sessions of 2004-2006 for the seismic interferometry method in Baikal region is presented.