



Precursors of major earthquakes place and magnitude on the active continental margins

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Deep shocks focal mechanism from CMT-Catalog was analyzed in Pacific north-west part with aim of large earthquakes foreshocks searching. K. Mogi's selection deep-focus foreshocks criterions modified by the authors on the base of contemporary ideas on geodynamic process non-linearity were used and allowed to increase of already found statistics. On new stage dependences between 15 earthquakes of 1981-1997 $M_w \geq 6.4$ and foreshocks parameters (number N and time period T of existence) with correlation coefficients $R_c = 0.93$ and 0.92 accordingly were made precise. Later 20 seismic events of 1982-2001 and 112 their foreshocks were attracted: on more hard selection rules 5 events were struck off 15 (1981-1997) as aftershocks. Orthogonal regression method was used for dependences calculation and main shocks were taken with their deep-focus foreshocks as earlier but R_c values became more (0.99 and 0.97). For this data such regressions for 23 seismic events of 1982-2004 and 120 their foreshocks were calculated with $R_c = 0.99$ and 0.98 . Comparison of specified equations with made before showed insignificant changes of angle coefficients and free members. It is evidence of sufficient stability of these relations during the time. Received results can provide next possibilities for decision of medio-urgent earthquake prognosis problem: 1) determination of future large event position as crossing place of compressive stress axes directions from deep-focus foreshock sources; 2) estimation of this event magnitude and approximate occurrence time on displayed foreshocks number N and their time period T . Equality of magnitude values $M_w(N)$ and $M_w(T)$ found on specified relation will testify to foreshocks process finishing and possible event beginning in nearest time, but inequality of them $M_w(N) \neq M_w(T)$; to vagueness of these parameters. Indicated possibilities are confirmed on some examples of the past years large earthquakes: Kronotsk 1997 $M_w = 7.8$; Tokachi-Oki 2003 $M_w = 8.3$;

Simushir 2006 Mw =8.3.