



Historical Earthquakes and Active Structure for Georgia

Nino Tsereteli and Otar Varazanashvili

Institute of Geophysics, Department of Seismology Seismic Hazard and Disaster Riskss, Tbilisi, Georgia
(nino66_ts@yahoo.com, 995 32 332867)

Long-term seismic history is an important foundation for reliable assessment of seismic hazard and risk. Therefore, completeness of earthquake catalogues in the longest historical part is very important. Survived historical sources, as well as special researches from the institutes, museums, libraries and archives in Georgia, the Caucasus and the Middle East indicate to high level of seismicity which entailed numerous human casualties and destruction on the territory of Georgia during the historical period. The study and detailed analysis of these original documents and researches have allowed us to create a new catalogue of historical earthquakes of Georgia from 1250 BC to 1900 AD. The method of the study is based on a multidisciplinary approach, i.e. on the joint use of methods of history and paleoseismology, archeoseismology, seismotectonics, geomorphology, etc. We present here a new parametric catalogue of 44 historic earthquakes of Georgia and a full “descriptor” of all the phenomena described in it. Constructed on its basis, the summarized map of the distribution of maximum damage in the historical period (before 1900) on the territory of Georgia clearly shows the main features of the seismic field during this period. In particular, in the axial part and the southern slope of the Greater Caucasus there is a seismic gap, which was filled in 1991 by the strongest earthquake and its aftershocks in Racha. In addition, it is also obvious that very high seismic activity in the central and eastern parts of the Javakheti highland is not described in historical materials and this fact requires further searches of various kinds of sources that contain data about historical earthquakes. We hope that this catalogue will enable to create a new joint (instrumental and historical) parametric earthquake catalogue of Georgia and will serve to assess the real seismic hazard and risk in the country.