INTRODUCTION

The Pannonian region occupy the territory between the Mediterranean area, what seismically is one of the most active regions in the world, and the East European Platform what can be treated as nearly aseismic. The Pannonian basin is bounded on the north to the east by the Carpathian mountain belt, on the south by the Dinarides mountain belt and on the west by the Eastern Alps. The area is tectonically rather complex and has been studied intensively for the last twenty years. Development of the Carpathian mountain belt and the Pannonian basin is attributed to collision between the Eurasian Plate and the African Plate between the Paleocene and Middle-Late Miocene. Different authors basically agree that the present-day deformation in the Pannonian basin system is controlled by the northward movement and counterclockwise rotation of the Adriatic micro plate relative to Europe.

The study of the current tectonics requires input data from the seismic activity of the area: if existing tectonic features are active in the present, or were active in the near past, this necessarily should be reflected in current seismicity. By definition, areas where earthquakes occur are areas of active tectonics. Earthquakes represent the sudden release of slowly accumulated strain energy and hence provide direct evidence of active tectonic processes. However, low and moderate seismicity at intraplate areas generally precludes reliable statistical correlation between epicenters and geological features.

Seismicity in the Pannonian basin is relatively low comparing to the peripherals and the distribution of earthquake epicenters shows a rather scattered pattern at the first glance. It is particularly difficult to decide whether the epicenters occur at isolated places or along elongated zones however, at several single places earthquakes occur repeatedly. For example, near to Eger (47.9N; 20.4E) at least sixteen earthquakes with more than fifty greater aftershocks occurred over a time interval of some 70 years. Komárom and Mór area (47.4-47.8N; 18.2E), Jászberény (47.5N; 20.0E), Kecskemét (46.9N; 19.7E) and Dunaharaszti (47.4; 19.0E) also produced significant activity over a certain but limited period of time. Moderate seismicity does not necessarily mean moderate size of earthquakes: reports of major earthquakes often refer to heavy building damage, liquefaction (e.g. 1763 Komárom earthquake, M 6.2; 1911 Kecskemét earthquake, M 5.6) and sometimes the possibility of fault rupture (e.g. 1834 Érmellék earthquake, M 6.2). These observations indicate that magnitude 6.0-6.5 earthquakes are possible but not frequent in the Pannonian basin. Several authors have shown the difficulty in constructing any meaningful geographical pattern of epicenter distribution when the statistical significance of the data is so low. Using only historical and early instrumental data, it really has been very problematic to find strong correlation between known tectonic structures and earthquakes. The recent high quality earthquake observations and locations may gradually change this situation.

The *Paks Micro-seismic Monitoring Network* has been operational since 1995. In 1999, a new set of stations (*Üveghuta Micro-seismic Monitoring Network*) has been installed with primary purpose of monitoring a potential nuclear waste disposal site. The typical detection threshold of the current local networks, supported by other existing stations, is around 1.5-2.0 ML, somewhat lower in the middle of the country and a little higher towards the border regions. This means that in most part of the country it is very unlikely that felt earthquakes go undetected.

In 2000, some 400 seismic events have been recorded by the monitoring networks and 150 of them happened in the monitored geographic window given below. The developing database of these well-located earthquakes can be used, in one hand, to resolve the tectonic framework in the Pannonian Basin and required on the other hand to refine our understanding of the level of seismic risk in Hungary.

Further to the better understanding of the seismic hazard, the seismic monitoring project has been successful in accumulating seismic data to accuracy not before possible, giving a significant contribution to improve the understanding of the earthquake mechanisms within the whole Pannonian Basin.

This Earthquake Bulletin is a united annual summary report of all earthquake-monitoring projects. The information in the Bulletin is based on all available earthquake related data provided by different organizations. The geographic region covered is bounded by latitudes 45.5-49.0N and longitudes 16.0-23.0E.