



Is there really an active fault (Cibyra Fault?) cutting the Stadion of the ancient city of Cibyra? (Burdur-Fethiye Fault Zone, Turkey)

İrem Elitez and Cenk Yaltırak

Istanbul Technical University, Geology Engineering, Turkey (elitezi@itu.edu.tr)

The Cibyra segment of the Burdur-Fethiye Fault Zone (BFFZ) is in a tectonically very active region of southwestern Anatolia. The presence of the Cibyra Fault was firstly suggested by Akyüz and Altunel (1997, 2001). Researchers identified traces of historical earthquakes in Cibyra by taking into account the collapsed seat rows on the east side of the stadion as reference. They claimed that the NNE-SSW left lateral fault Cibyra Fault (related to Burdur-Fethiye Fault Zone) continues through Pliocene sediments on both eastern and western sides of the stadion of Cibyra.

The questionable left-lateral fault had been examined in detail by ourselves during our 60-days accommodation in the ancient city of Cibyra excavations for the Burdur-Fethiye Fault Zone Project in 2008, 2009 and 2012. A left-lateral offset on the Stadion was firstly mentioned in a study whose aim is to find the traces of Burdur-Fethiye Fault (Akyüz and Altunel, 2001) and many researchers accepted this fault by reference (for example Alçıçek et al. 2002, 2004, 2005, 2006 and Karabacak, 2011). However as a result of the field observations it is understood that there is no fault cutting the Stadion. By the reason of the fact that there are a lot of faults in the region, however the fault that devastated the ancient city is unknown. The deformation traces on the ruins of the ancient city display a seismic movement occurred in the region. It is strongly possible that this movement is related to the NE-SW left lateral oblique normal fault named as Cibyra Fault at the northwestern side of the city. Especially the ravages in the eastern part of the city indicate that the deformations are related to ground properties.

If the rotation and overturn movement are considered and if both movements are the product of the same earthquake, the real Cibyra Fault is compatible with normal fault with left lateral component. After the 2011 excavations and 2012 field studies, the eastern wall of the Stadion showed that there is no trace related to fault on the suggested location. Therefore, according to our field observations, we suggest that "the fault cutting the Stadion" idea is speculative and invalid. In this context we are of the opinion that a left lateral active Cibyra Fault is not present and the real Cibyra Fault is located on the northwestern side of the city.