

## **Crustal scale Upper Cretaceous mass flows northwest of Ankara related to the destruction of the forearc**

***Okay, A.<sup>1,\*</sup> and Altiner, D.<sup>2</sup>***

1) *Istanbul Technical University, Istanbul, Turkey, \*E-mail: okay@itu.edu.tr*

2) *Middle East Technical University, Ankara, Turkey*

Huge Upper Cretaceous (Turonian-Coniacian) olistostromes, with a stratigraphic thickness close to two kilometres, crops out along an 80-km-long belt west and north of Ankara. The Kargabedir Olistostromes are stratigraphically underlain by the Lower Jurassic sandstones or by the Upper Triassic Karakaya Complex. Over 90 % of the blocks in the mass flows are made up of pelagic limestones, which reach 600 m in size. Paleontological studies have shown the presence of limestones blocks of Callovian-Oxfordian, Tithonian, Berriasian, Aptian, Albian, Cenomanian and Turonian ages. Apart from the dominant limestone blocks, there are minor tuff, volcanoclastic sandstone and radiolarian chert blocks within the olistostromes. No tectonic deformation, apart from that induced during the emplacement, was observed in the olistostromes. The individual mass flows are separated by horizons, up to 160 m thick, made up of fine-grained siltstone, marl, volcanoclastic sandstone and calciturbidite. The youngest ages obtained from these horizons are latest Turonian and Coniacian.

The Kargabedir Olistostromes are stratigraphically overlain by an ophiolitic melange made up of basalt, chert, serpentinite and limestone. The Kargabedir Olistostromes and the ophiolitic melange were emplaced into the basin during the latest Turonian – Coniacian and were later unconformably overlain by Santonian red pelagic limestones. During the early Campanian the region was deformed, uplifted and eroded and this phase was followed by the deposition during the middle-late Campanian of continental sediments, rudist-bearing limestones and volcanoclastic turbidites. The emplacement of the Kargabedir Olistostromes and the ophiolitic melange is related to the tectonic uplift of the distal fore-arc and the accretionary ridge during the latest Turonian – Coniacian, which resulted in the collapse of these regions to the northwest towards the continent.

This study was supported by the TÜBİTAK project 113R007.