

**NEW EVIDENCE CONCERNING TO THE NIGDE FAULT IN THE NEAR
EAST AND SOUTH OF THE SETTLEMENT AREA OF THE NIGDE,
CENTRAL ANATOLIA, TURKEY**

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ABSTRACT

The main purpose of this paper is to investigate of the Niğde Fault zone, which passes through the city of Niğde. The study area located in the south and eastern part of the Niğde Province, and crops out different types of geological units from Paleozoic to Cenozoic in that vicinity. These units are, from old to young, metamorphic rocks, which is known as Niğde Massif composed of Gümüşler, Kaleboynu, Aşıgediği formations, Üçkapılı granodiorite (Paleozoic to Mesozoic), Kızılkaya Ignimbrite (Upper Miocene to Pliocene), Karataş Volcanites (Middle Pleistocene), Quaternary fluvial sediments, talus and alluvium.

The tectonics, basin development, volcanism and geomorphology of the Central Anatolia are largely under the control of three dominant faults. These are the NW-SE trending and strike slip Tuzgölü Fault, NNE to SSW trending and left lateral strike-slip Ecemiş Fault and NE to SW trending dip slip Niğde Fault. In order to obtain concrete geological information related to this fault, electric resistivity and self-potential (SP) measurements made 50 m interval on two profile, which was out the fault line vertically. SP and Electrical resistivity measurements made in 76 points along the first profile, 49 points along the second profile where located at SW and NE of the Niğde, separately. High Electrical resistivity and SP values were recorded at 10, 40, 45 points in the first profile and 11, 27 and 47 points in the second profile. These points are evaluated as an important finding of the existence of discontinuities of the Niğde Fault Zone, which is covered by young sediments. It is understood from the Electrical resistivity and SP data that the Niğde Fault Zone consisting of at least three segments (S1, S2, S3). The distance from the segment (S1), which is located in the South, to the NW margin of the Niğde Massif varies from 750 to 2500 m. These segments are parallel to each other extend in NE-SW direction. The NW edge of the massif is the fault scarp, which was retrograde towards to SE direction, in the Middle Miocene-Early Pliocene time. The presence of thick talus on the NW side of this fault zone supports this idea.

Keywords: Central Anatolia, Tectonic, Niğde Fault Zone, Electrical resistivity, Self-potential.

INTRODUCTION