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Questioning the Possibility of Aseismic Movement along the Ganos Section of the North Anatolian Fault with InSAR

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The onshore Ganos Fault is the westernmost section of the 1500 km long North Anatolian Fault (NAF) before it enters the Aegean Sea. The ∼45 km-long section last ruptured during the Mürefte-Şarköy earthquake of 1912 with a magnitude of Mw 7.4 and together with its offshore continuation to the east also bounds the current seismic gap in the Marmara Sea. Earlier studies investigating the 1912 event revealed a N70° trending rupture zone with a maximum of 5.5 m of right-lateral offset observed near the town of Güzelköy. The non-existence of M>5 earthquakes since 1912 along the Ganos section raises the possibility of an ongoing aseismic fault creep just like the ones observed along the NAF near İzmit and İsmetpaşa. In this study, we will be questioning this possibility using the Persistent Scatterer and Small Baseline InSAR techniques for C, L and X-band SAR data covering the region which will also help us to improve our understanding of the interseismic behavior of the NAF along the Ganos section.