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Timing and mechanism of imbrication of an active continental margin facing the Neotethys, Kargı Massif, northern Turkey

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The Kirazbaşı Complex, in the Kargı Massif, north Central Turkey, is a sedimentary and tectonic mixture of ophiolitic and deep-marine sedimentary rocks and blocks of different origins. This complex is a syn-tectonic unit developed on the active southern continental margin of the Pontides facing to the Neotethys Ocean to the south. In the northern part of the massif, where these rocks are imbricated with pre-Cretaceous metamorphic units representing the continental basement, it displays an ordered stratigraphy and has a siliciclastic-dominant nature. This part was deposited in piggy-back and thrust-top basins during the Turonian to Campanian. In the southern part, the Kirazbaşı Complex is dominantly represented by deep-marine sediments, such as distal turbidites and cherts, and ophiolitic and epi-ophiolitic rocks, representing foredeep sediments and accretionary wedges. Foredeep deposits of the Kirazbaşı Complex yield rich radiolarian faunas, both from the matrix and from the blocks. Based on these radiolarian faunas, Carnian to Cenomanian ages are assigned for these deposits. According to our results, the Neotethys Ocean, which was already reached to an oceanic stage during Triassic, was consumed by northward dipping subduction during the Valanginian to Campanian. In this paper we present timing and mechanism of both the subduction and imbrication on the active continental margin in response to this subduction.