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Paleomagnetic evidence for large-scale northward terrane translation of Crimea since the Jurassic

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The East European Platform, and especially the area surrounding the Black Sea (North Dobrogea, Crimea, Caucasus), is a very suitable region to study the behaviour of large-scale (lithospheric) fault zones, because subduction processes have continuously been taking place over a 400 Myr period (Devonian-Neogene). However, major controversies exist on the mechanisms that have caused fault activity, back-arc spreading or even continental rifting. Knowledge of the paleolatitudinal positions of the different blocks and plates through time is a crucial prerequisite to discriminate between the different models and hypotheses. This can be established by detailed paleomagnetic reconstructions of well-dated lithological sequences. In this context it is of importance that paleomagnetic results from sediments can show too low inclinations, caused by sedimentary processes (e.g. compaction) that cause so-called "inclination errors". However, a new model was recently developed by Tauxe and Kent, which can be used to predict distributions of paleomagnetic field vectors as a function of paleolatitude, but only when a large data set ($N > 100$) is available. We measured and analysed a high number of paleomagnetic samples from several sedimentary sequences of Triassic and Jurassic age on the Crimean Peninsula and the North Dobrogea Orogen to determine the paleolatitudinal position of these regions through time. These results are corrected by the elongation/inclination method of Tauxe and Kent, to overcome the fundamental problem of inclination error in sediments. We conclude that the Triassic and Jurassic rocks from South Crimea have originally been formed at very low equatorial latitudes. This suggests that Crimea was certainly not part of Eurasia and that a position close to the Cimmerian terranes is more likely. Results from Triassic sections in North Dobrogea show systematically very high inclinations, but we are not certain here that we

are dealing with a primary signal. Earlier magnetostratigraphic studies of this region, however, showed similar high-inclination results, but a conclusive explanation has not yet been found.