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Late Miocene evolution of the Black Sea: insights from palynology and strontium isotope ratios

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During the late Miocene, the connection(s) between the Mediterranean Basin and the Atlantic Ocean deteriorated, which ultimately culminated in thick evaporite deposits and a water level drop in the Mediterranean Basin during the so-called Messinian Salinity Crisis (MSC, 5.97 – 5.33 Ma). It has been claimed that Black Sea, in response to the MSC, also desiccated but these claims have been proven incorrectly.
Here we present palynological (dinoflagellate cysts and pollen) and strontium isotope ratios from two Black Sea records: the Zheleznyi Rog outcrop section and Deep Sea Drilling Project Hole 380A. Organic walled cyst-producing dinoflagellates are highly sensitive to even small changes in surface waters and strontium isotope ratios are excellent recorders of changing connectivity. Our records provide therefore more insights in the sensitivity of the Black Sea to Messinian Salinity Crisis and the general evolution of the late Miocene Black Sea.