Aridity cycles in the Levant and Dead Sea lake level collapse during the last interglacial period

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The last interglacial peak represents an analog for conditions in a warmer future climate. Sediments recovered from the Dead Sea and dated to the last Interglacial indicate a complex interplay between Northern Hemisphere (NH) -driven climate in the Levant, which imposes hyperarid conditions during interglacials, and selective incursions of tropical climate systems from the south. A relatively wet phase during the peak of the last interglacial is associated with a threshold crossing of African monsoon intensity that briefly dampened the hyperarid conditions. As conditions shifted to below threshold values, the Dead Sea experienced one the strongest arid spells in its studied history and approached full desiccation. These results place new time constraints on possible windows of human migration and habitation in the Levant corridor, and are considered in the context of climate models predicting a more hyper-arid Levant with increased global mean temperatures, a scenario that will lead to increased fresh water scarcity at a time that the surrounding populations are fully using the regional fresh water runoff.