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Possibility of understanding changes in Caspian Sea catchment using PMIP modeling and data to learn about the future

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The Caspian Sea (CS) has demonstrated a broad range of level/area variations during the Holocene and historical time. Observed or reconstructed CS level positions during the Holocene and modern periods were compared with the CS level positions calculated based on simulations in experiments using the CMIP5/PMIP3 protocol.
Practically the CS is a natural laboratory depicting the regional-scale water budget and climate change over the Eastern Europe. Large inertia of the sea generates red noise characteristics of the level change time series. It was realized that decadal- and centennial-scale level oscillations cannot be interpreted as reactions to slowly Milankovitch forcing. Determination of their origin has to provide understanding of future behavior of the CS.