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Hydrologic budget of the intermittent karst lake Modro jezero

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The work analyzes the continuous monitoring of an intermittent karst lake in south east Croatia. Modro Jezero (Blue Lake) is a collapsed doline with ongoing side slope degradation and collapsing processes. The water in the lake is mostly a reflection of the ground water oscillations in the study area, yet the significant contribution of the surface and subsurface flow of the lake's catchment can be registered. The measured data present the first systemized and continuous monitoring of the hydrological parameters of this lake. The hydrological analysis also involved the daily rainfall data and daily average air temperatures recorded at the nearby Imotski meteorological station. Geodetic survey and photogrammetry models were used to determine the geometry of the lake. The intensities of the water level rising and falling, as well as daily average inflow and outflow into and from the lake, were calculated using the obtained data. For the purposes of the water budgeting, the effective rainfall available for the groundwater recharge was calculated according to fluid-mass balance method introduced by Palmer. Furthermore, the hydrological model was created with the attempt to simulate the inflow and outflow processes of the lake.