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Sinking karst river Dobra hydrology (Croatia)

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A case of special hydrological characteristics of sinking karst river Dobra is analysed. Its catchment is located in the central part of the Dinaric karst region of Croatia. The Dobra River has three parts. First one calls Upper or Ogulinska Dobra. Its length from the spring to the Djula sink is 51.2 km. The second part flows through karst underground from the Djula sink to the karst spring zone near village Gojak. In order to reappear at the karst springs zone of the Lower or Gojačka Dobra River it flows through cave system 16,396 km long. The shortest aerial distance between Djula sink and the Lower Dobra River karst spring zone is 4.6 km. The longitude of this third part of the Dobra River is 52.1 km. Along the some sections of the open watercourse of the Upper Dobra there are huge water losses through small karst sinks located on the bottom of its channel. The hydrological as well as hydrogeological regime of the Dobra River is strongly influenced by the construction of HEPP Gojak built in 1959. Water from the neighbouring Zagorska Mrežnica River is provided by tunnel to the hydroelectric power plant (HEPP) Gojak situated immediately downstream from the Gojak karst spring zone. By this way mean annual discharge of the Lower Dobra has increased doubly, from about 13.6 to 28 m3/s. At the end of July 1999, the town of Ogulin was flooded. This flood was caused by insufficient swallow capacity of the Djula spring. New changes of hydrological, hydrogeological and ecological characteristics of the Lower Dobra River should be expected in the near future. The HEPP Lešće on the Lower Dobra is currently under construction.