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Intra-annual variability of water balance components of the larger basin in Bulgaria – the Maritza river basin

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The hydrology of the larger Bulgarian river is considered through the intra-annual changes in the components of the water budget. Total evaporation, soil moisture evolution, and available runoff water are modelled with a deterministic model - land surface scheme – ISBA (Interface Soil Biosphere Atmosphere). The one-dimensional model is applied at each cell of the considered region, and then the results are averaged and/or accumulated for the whole river basin. Measured meteorological data are used for model input, while measured soil moisture and monthly river discharge are used for model calibration and validation. Maritza river basin because of its geographical position represents both the continental and the Mediterranean hydrological cycle types. The mountain catchments have pronounced nival regime, while in the south Mediterranean climate is dominant. The paper describes the modelling method and results. The monthly components of the water balance are either derived from interpolated measurements (precipitation) or found as results of modelling – evaporation, infiltration and runoff.