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Sensitivity analysis for the water-air heat exchange term

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ABSTRACT

A term expressing heat exchange between water and air is often present in models of thermal pollution spreading in rivers. The importance of this term depends strongly on temporal and spatial scale of the process as well as on meteorological and hydrological conditions. Although heat exchange between the water and atmosphere has been studied for many years, its determination is still difficult in practical cases, and different simplifications are considered in practice. The objective of this study is to verify which of the necessary input data needed for the net heat flux calculations are of utmost importance and which of them influence its final value most. The analyses were performed for several sets of data for real case studies, for different seasons.