



## Evaluating hypolimnetic diffusion parameters in thermally stratified lakes

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**ABSTRACT:** The vertical transport of solutes in the anoxic hypolimnion of thermally stratified lakes can be described by a one-dimensional diffusion model. Using ammonium and dissolved methane as inert tracers, the model was solved, both analytically and numerically, for Lake Kinneret while taking into account sedimentary release, hypolimnetic transport, and the deepening of the thermocline depth. An average seasonal turbulent diffusion coefficient in the hypolimnion of  $1.5 \pm 0.5 \text{ m}^2 \text{ d}^{-1}$  was confirmed independently by both tracers. In all cases, the modeled hypolimnetic distribution pattern was highly correlated with the actual measurements.

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