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Effects of seasonal fluctuations of surface heat flux and wind stress on mixing and vertical diffusivity of water column in deep lakes

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Highlights

- Main heat losses were due to evaporation in summer and longwave radiation in winter
- Local wind intensities affected convection-driven mixing in the water column
- Winter water column vertical diffusivities were 18 times greater than summer values
- Epilimnion and well-oxygenated zone depths similarly varied in October-December
- Epilimnetic and hypolimnetic SO_4^{2-} and Cl^- concentrations tracked winter overturns

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