Snow and ice cover on a shallow boreal lake: The effect on in-water processes

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The inter-annual variability of ice and snow on a small shallow lake Vendyurskoe (Karelia, Russia) is investigated on the basis of long-term observational data (1994-2014). The water temperature, thickness of the snow and ice, as well as incident, reflected and penetrating through the ice fluxes of solar radiation are used in the analysis. The optical properties of ice cover of different structure are considered with due regard to the requests from lake modelers. Field data from snow-and-ice covered Lake Vendyurskoye are reviewed in respect to the possible influence of chemical and biological processes on mixing within a bottom boundary layer.