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Modelling the Early Weichselian Eurasian Ice Sheets between 100 kyr BP and 80 kyr BP : role of ice shelves and influence of ice-dammed lakes

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During the last glaciation, a marine ice sheet repeatedly appeared in Eurasia. The floating part of this ice sheet was essential to its rapid extension over the seas. During the earliest stage (90kyr BP), large ice-dammed lakes formed south of the ice sheet. These lakes are believed to have cooled the climate at the margin of the ice. Using an ice sheet model, forced by a general circulation model outputs, we investigated the role of ice shelves during the inception and the influence of ice-dammed lakes on the ice sheet evolution. Inception in Barents sea seems due to thickening of a large ice shelf. We observe a substantial impact of the lakes on the evolution of the ice sheets. Reduced summer ablation enhances ice extent and thickness, and the deglaciation is delayed by 2000 years.