



## **Modelling freshwater and ice streaming events from the West European Ice Sheets**

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The impact of freshwater and ice streaming events from the British and Fennoscandian ice sheets is less well known than Heinrich events from the Laurentide, while there is evidence that disintegration of these European ice sheets could have had an impact on the ocean. We have performed experiments with an intermediate complexity climate model to study the sensitivity of such events, for both hypothetical and geologically constrained scenarios. Ice streaming events have been modelled by coupling a dynamic and thermodynamic iceberg model to the climate model, in order to determine the explicit effects of icebergs on climate at the LGM. In our model the glacial ocean is almost as sensitive to catastrophic events from the European side of the Atlantic as from the Laurentide side for similar sized events. Simulations of 'real' events, such as the catastrophic breakup of grounded ice over the North Sea or the breakup of ice over the West European continental shelf, do not cause a complete shutdown of the ocean meridional overturning circulation. However they are shown to have a significant impact when their equivalent freshwater input is larger than 0.1 Sv, which is not beyond geological evidence.