



## **Modelling the trajectory of erratic boulders in the western Alps during the last glacial maximum**

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Erratic boulders of the western Alps provide valuable information about the flow field prevailing during the last glacial maximum. In particular, the origin, the exposure time and the location of several boulders identified along the Jura are well documented. The goal of this study is to corroborate these information with ice flow simulations performed with the Parallel Ice Sheet Model (PISM). PISM is capable to simulate the time evolution of a large scale ice sheet by accounting for the dynamics of ice, englacial temperature, surface mass balance and variations of the lithosphere. The main difficulty of this exercise resides in large uncertainties concerning the climate forcing required as input in the surface mass balance model. To mimic with climate conditions prevailing during the last glacial maximum, a common approach consists of applying different temperature offsets and corrections in the precipitation patterns to present-day climate data, and to select the parametrizations which yield the best match between modelled ice sheet extents and geomorphologically-based margin reconstructions. To better constrain our modelling results we take advantage of some erratic boulders from which we know their origin. More precisely, we are looking for the climatic conditions which reproduce at best the trajectories of the boulders from their origins to their final location.