



## **Glacial Isostatic Adjustment - a hot topic in cold regions**

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Glacial Isostatic Adjustment (GIA) modelling tackles the classic geodynamical problem of determining the solid Earth response to surface load changes by ice and ocean water whilst at the same time solving for the gravitationally-consistent redistribution of ice sheet meltwater across the global ocean. Understanding this process is important for quantifying both present-day ice mass balance and the response of ice sheets to past and future climatic change. The two fundamental unknowns in this problem are (i) the rheology of the solid Earth, and (ii) the history of global ice sheet change. In this talk I will discuss the myriad of approaches that are used to constrain these two components. In particular, I will focus on Antarctica, where the presence of a continuously-evolving ice sheet, situated on top of one of the most rheologically-diverse regions of the planet, provides us with a challenge that can only be resolved by drawing on knowledge from across the fields of geodynamics, glaciology, geology, geodesy and seismology.