## Modelling Perspective for the Past and Future tipping points of ice-sheets and climate

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Ice sheet volume changes are the largest potential source of sea level change in the past and future. Since ice sheets are vulnerable under climate changes, it is important to carefully understand its dynamics and identify its irreversible behaveour, and critical threshold under climate change. Here I show modeling studies that simulate the past ice sheet change as well as climate change and discuss the implication for the studies needed to understand the tipping points both in past and future.

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