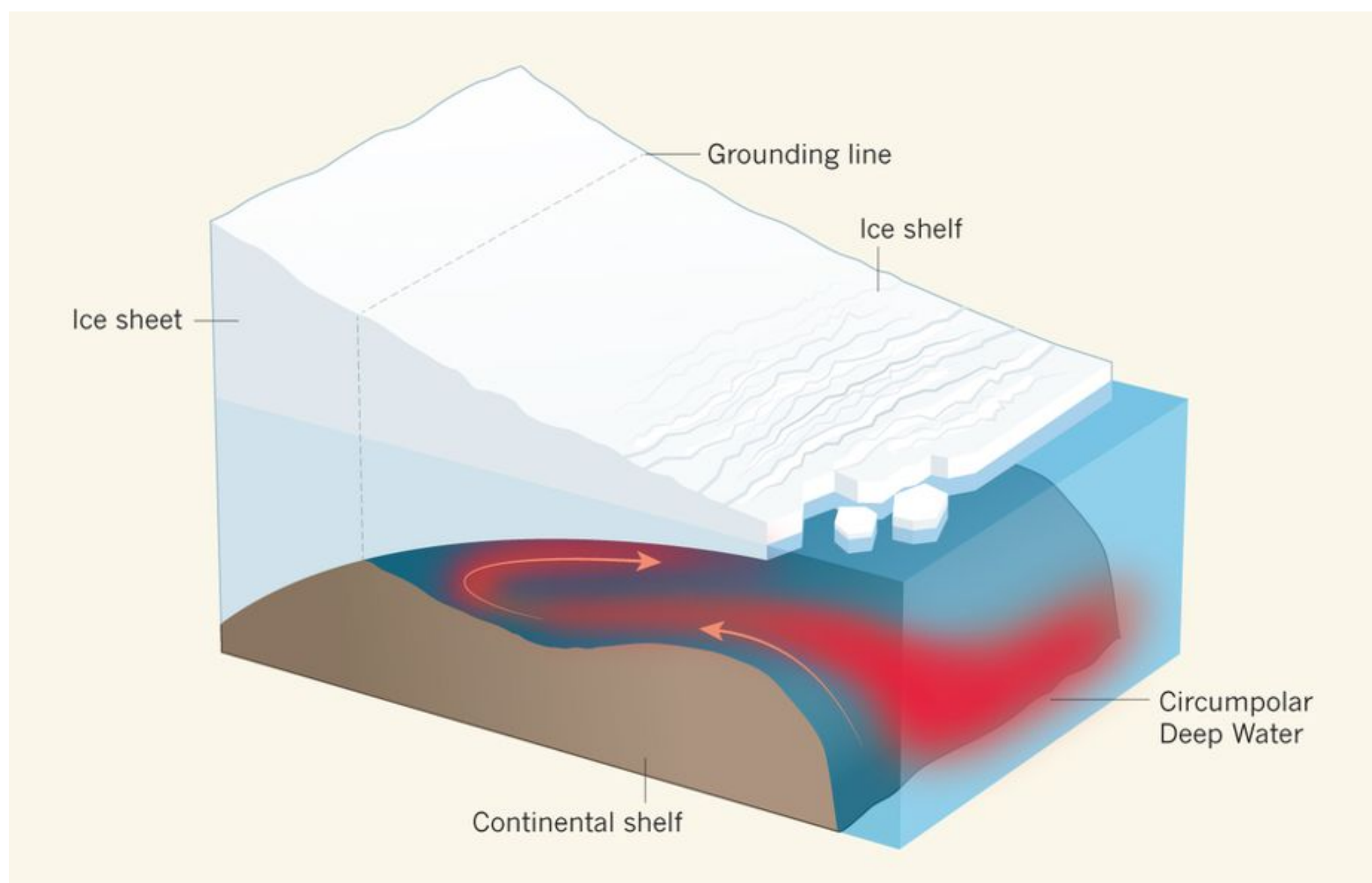


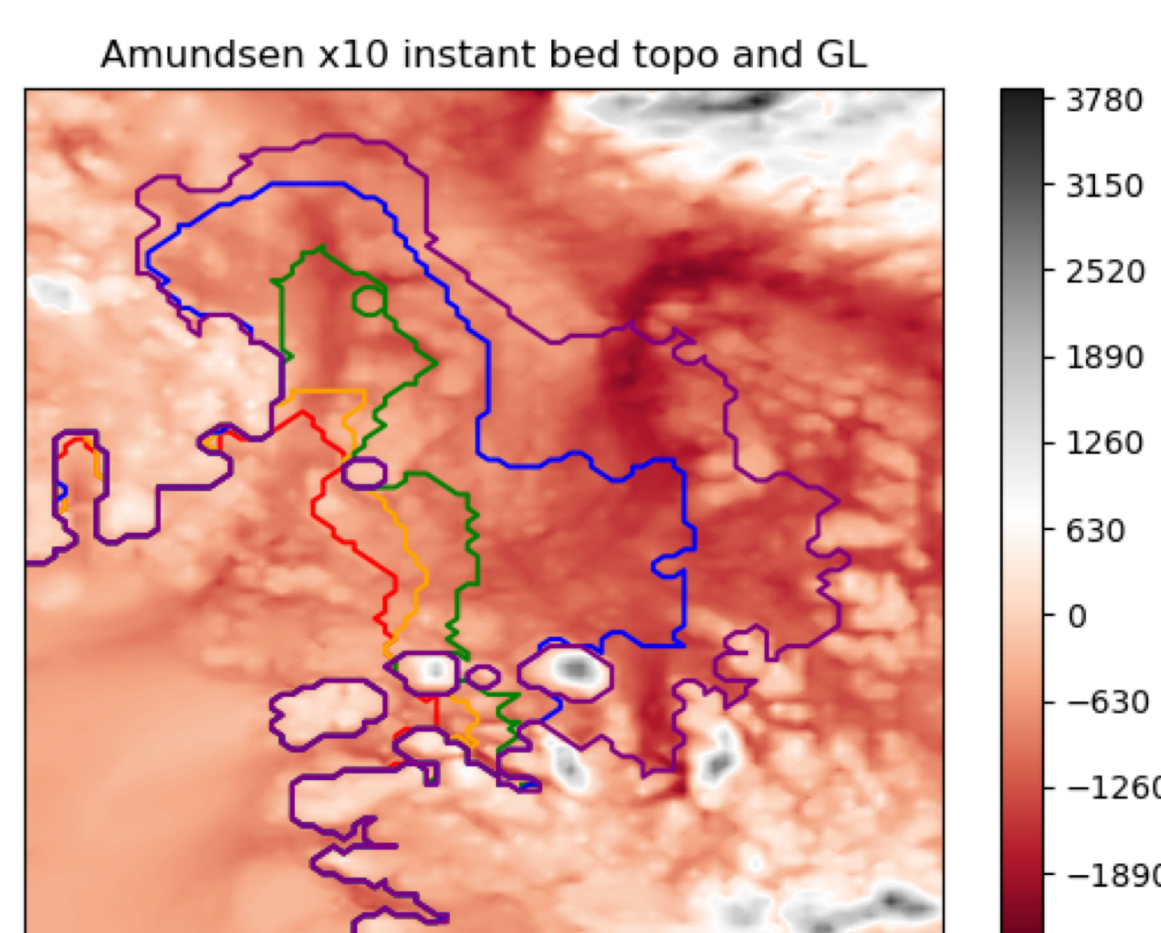
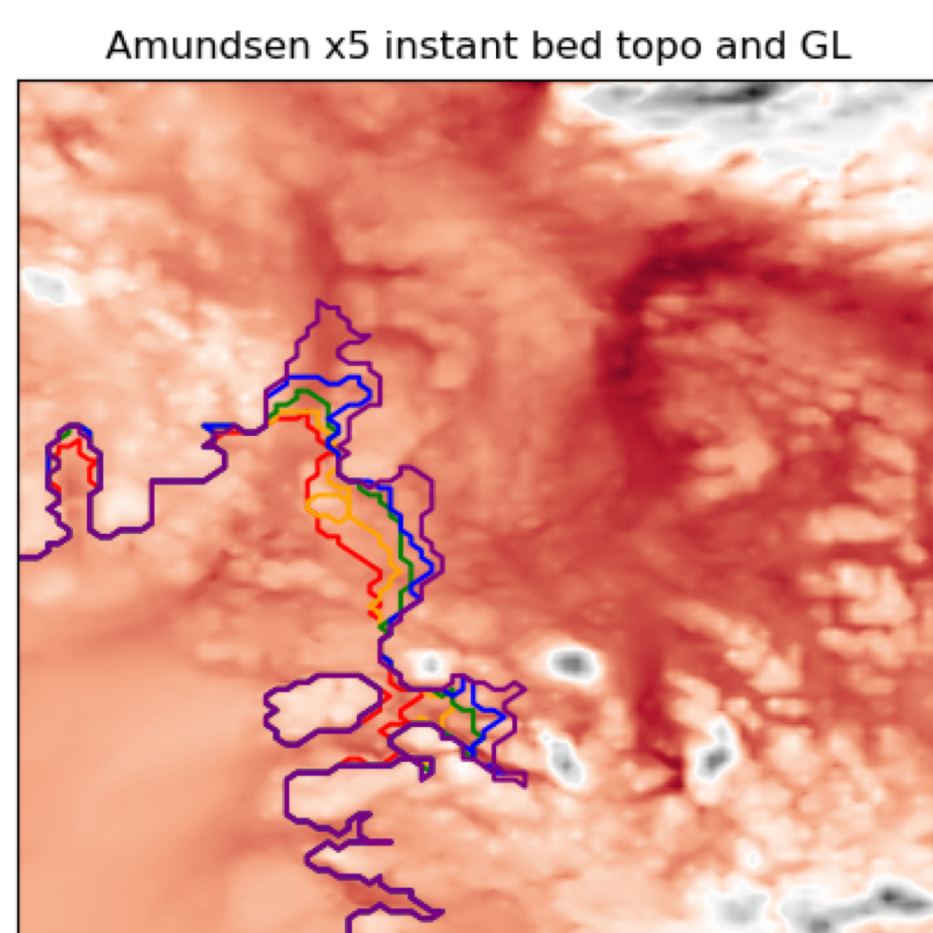
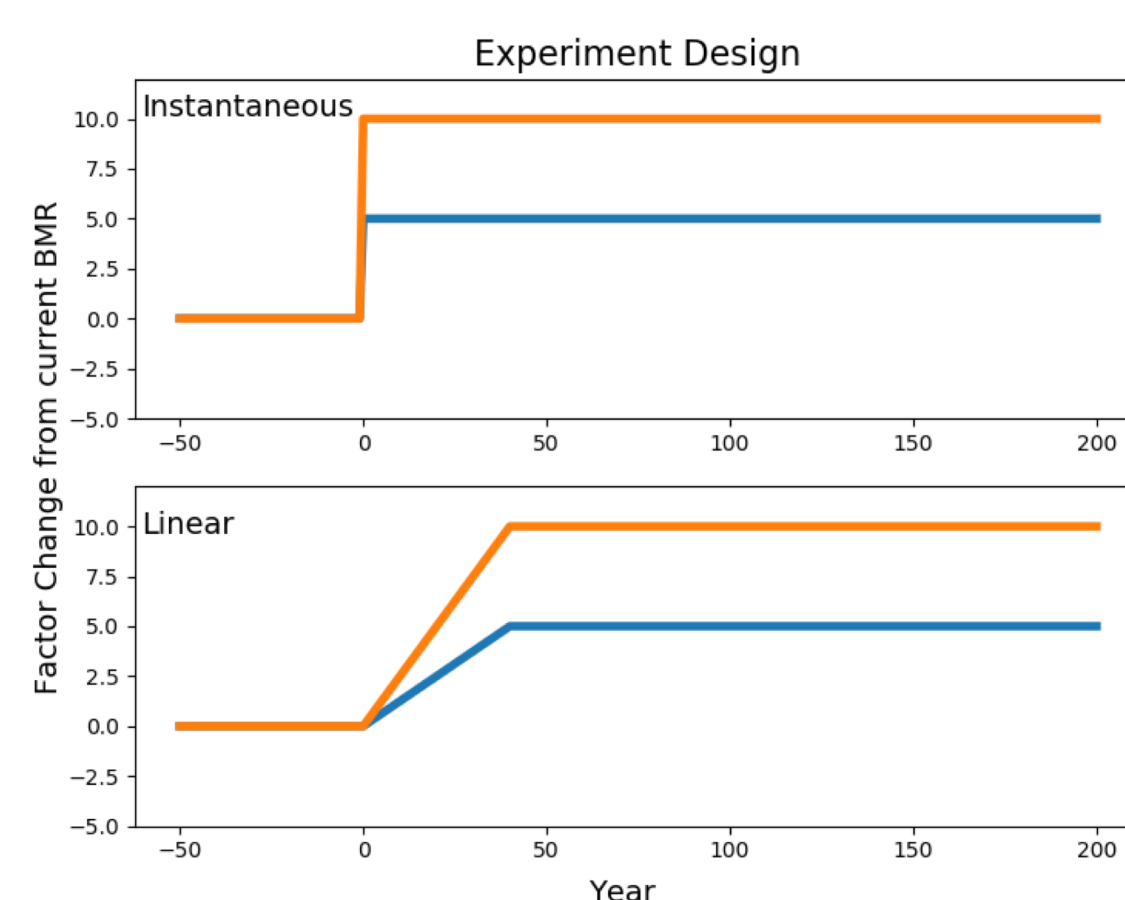
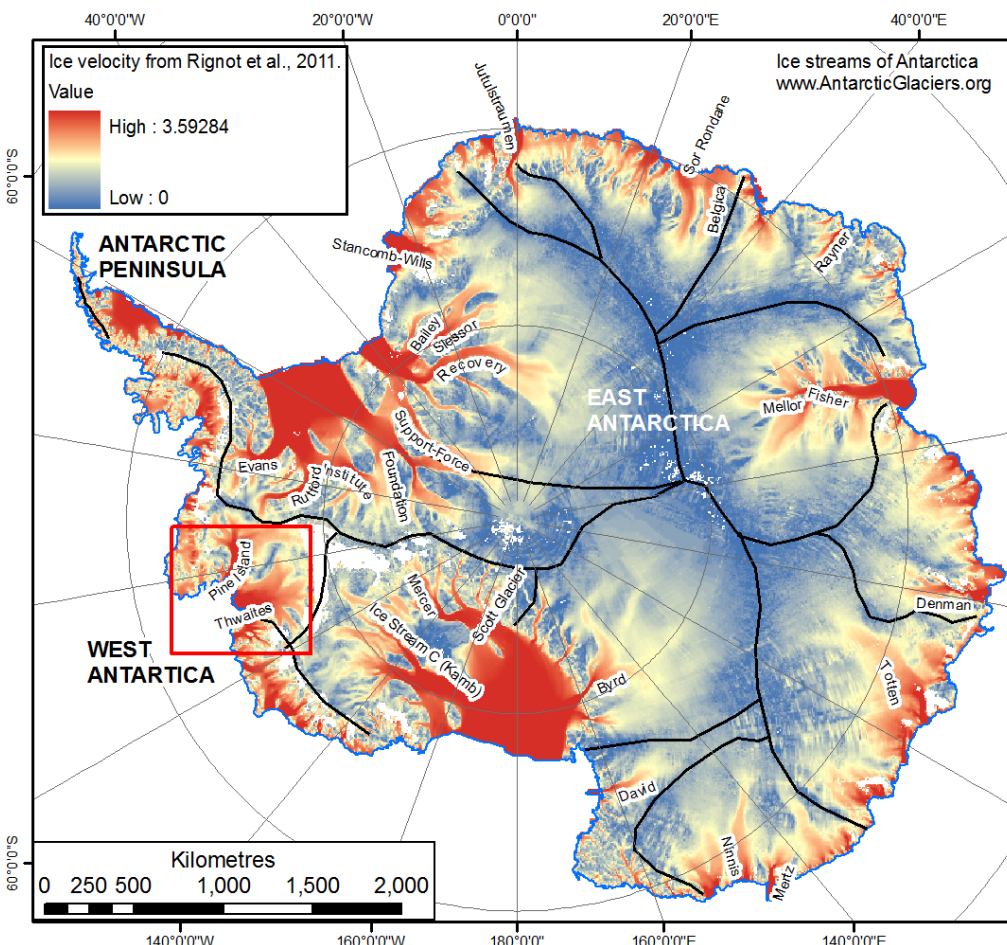
Antarctica's sea level contributions



We really don't know how quickly and how much ice volume Antarctica will lose in the coming years/centuries/millennia. It could be catastrophic. It may not be.

In Antarctica, the main mode of melting occurs when relatively warm water enters an ice shelf cavity and melts the shelf from below. This causes the grounding line to recede and ice to flow from the land into the ocean, causing sea level rise (SLR).

Warm Circumpolar Deep Water from the Southern Ocean erodes floating ice shelves, destabilizing the grounded ice sheet and producing sea level rise. (Hertzberg, Nature 2017)



What kinds of simulations can we do with a high resolution ice sheet model to explore the effects of warmer cavity waters on SLR (and ultimately better quantify uncertainty in SLR)?

CISM experiments that instantaneously increase basal melt rates in the Amundsen Sea Embayment over 200 year. These show massive ice loss and grounding line recession. Future experiments will use more realistic melt rate curves.

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