

EGU2020-3255

<https://doi.org/10.5194/egusphere-egu2020-3255>

EGU General Assembly 2020

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Designing interventions in the ice sheet/sea level system

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The marine ice sheet instability may have already been initiated in several glaciers in West Antarctica. Hence controlling global temperatures is unlikely to be an effective way of preventing considerable sea level rise. This limits both the utility of greenhouse gas mitigation and solar radiation geoengineering as control mechanisms. Instead we evaluate various other options such as allowing ice shelves to thicken by reducing bottom melting, or slowing ice streams by drying their beds. We consider the engineering limitations, costs, and practical consequences of various designs and how a ladder of implementation might be climbed with regard to learning from Greenland and small-scale field trials. The governance, ethics, legality and societal implications for the local indigenous and global South are also discussed.