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Glaciers and sea-level rise

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There is convincing evidence that glaciers and small ice caps are currently shrinking in most glacierized regions of the Earth. Regional differences are large, which is a result of the inherent varability in the climate system. Too often regional changes are projected on a larger scale, which sometimes gives rise to misleading interpretations. Making an accurate estimate of the rate at which ice mass is lost on a global scale remains a challenge. In situ mass balance observations have a very limited coverage, and remote sensing techniques need further validation and calibration. Consequently, error bars are large.
Global sea level has been rising since at least the last hundred years and probably since the beginning of the nineteenth century. It is important to identify the causes for this rise. With respect to glaciers, length records form the only source of information that provides some global coverage. I will briefly discuss the character of these records and discuss methods to combine length records, mass balance observations and possibly meteorological records to arrive at an optimal estimation of the contribution of glaciers to sea-level rise during the past few centuries.