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Inferring controls on basal drag in the Amundsen Sea sector of Antarctica

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We consider a variety of ways that the basal drag that acts to resist the sliding of an ice sheet can be inferred from satellite observations, or from in situ observations. Three approaches are considered here. (1) use of inverse methods combined with large scale models of ice flow. (2) spectral analysis of basal topography combined with a theory of ice flow near small scale undulations, and (3) seismic methods that probe the physical characteristics of the subglacial sediment. Consideration is given to which sliding relationships are consistent with the available observations, and to identifying measurements that could help reduce ambiguity in sliding laws.