

Variation in Subglacial Roughness in West Antarctica: What does this mean for pre ice sheet sediment provenance?

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The WAIS displays asymmetries in its glaciology that in part may relate to the regional distribution of subglacial sediments. The current distribution of these sediments may in turn reflect erosional controls due to the current ice sheet, as well as inheritance from pre glacial geological processes, including the accommodation space from rifting, distance to paleohighs that may be sediment sources, and the location of the paleocoastline. We assess the comparative distribution likely sediments using radar imaging of subglacial structures, quantitative measurements of roughness at high spacial resolution, and potential fields methods, constrained with published results of basal shear stress and compared with new hypothesis for the evolution of the paleotopography of the WAIS.