



Mechanisms for the formation of lateral moraines in ice streams

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Palaeo-ice stream boundaries are often marked by the presence of moraines. Two mechanisms for the formation of these moraines are considered quantitatively here; (i) differential erosion rates related to lateral variations in the stream velocity; (ii) ice rises spreading laterally after the lower-elevation stream disappears - the 'lateral moraine' is really just a terminal moraine for the rise. Theory (i) implies that lateral moraines are not constructed features like terminal moraines, theory (ii) implies that they are constructed features. Such theories could potentially be tested in the field.

Images and profiles from field data are presented. Quantitative models for the two theories demonstrate that both theories are feasible. Criteria for distinguishing the two moraine types are presented.