

A scoping proposal to build a two dimensional ice-flow model for basin-scale glacier simulation in the Himalaya

Abstract:

The project proposes to implement a two dimensional glacier flow model under Shallow Ice Approximation (SIA). The aim is to produce an efficient model that could potentially be coupled to numerical models of hydrology, climate or landscape evolution. Once the basic model is ready and benchmarking is complete, attempts would be made to incorporate 1) debris transport, and 2) snow-avalanche parameterisation - two processes that are crucial to capture the dynamics of a typical Himalayan glacier. Some simple application of the model would also be attempted.