



## **Remote Sensing based modelling of Annual Surface Mass Balances of Chhota Shigiri Glacier, Western Himalayas, India**

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The current study aims at modelling glacier mass balances over Chhota Shigiri glacier (32.28° N; 77.58° E) in Himachal Pradesh, India using the Equilibrium Line Altitude (ELA) gradient approach proposed by Rabatel et al. (2005). The model requires yearly ELA, average mass balance and mass balance gradient to estimate annual mass balance of a glacier which can be obtained either through field measurements or remote sensing observations. However, in view of the general scenario of lack of field data for Himalayan glaciers, in this study the model has been applied only using the inputs derived through multi-temporal satellite remote sensing observations thus eliminating the need for any field measurements. Preliminary analysis show that the obtained results are comparable with the observed field mass balance. The results also demonstrate that this approach with remote sensing inputs has potential to be used for glacier mass balance estimations provided good quality multi-temporal remote sensing dataset are available.