GPUSPH modelling of Chamoli_Uttarakhand_geohazard-chain_event

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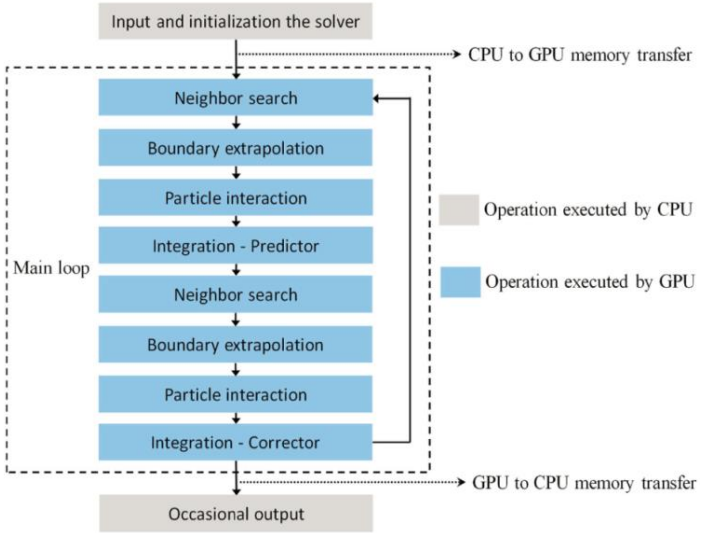
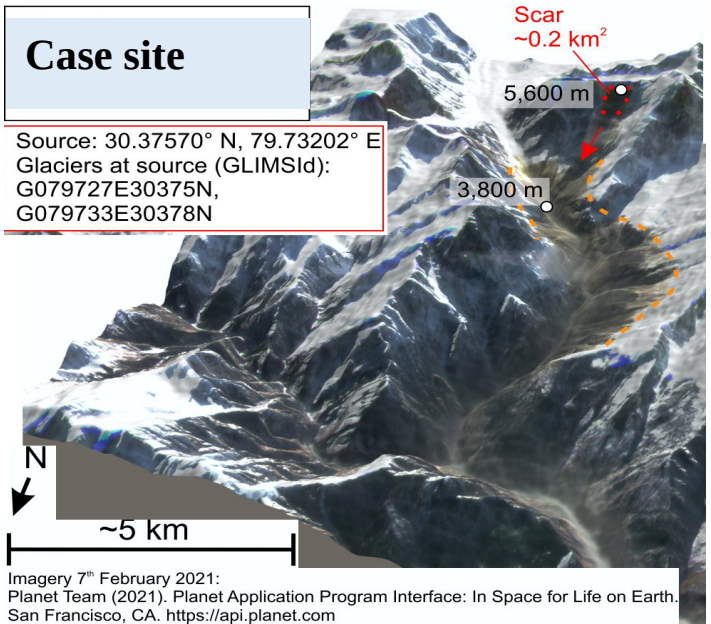
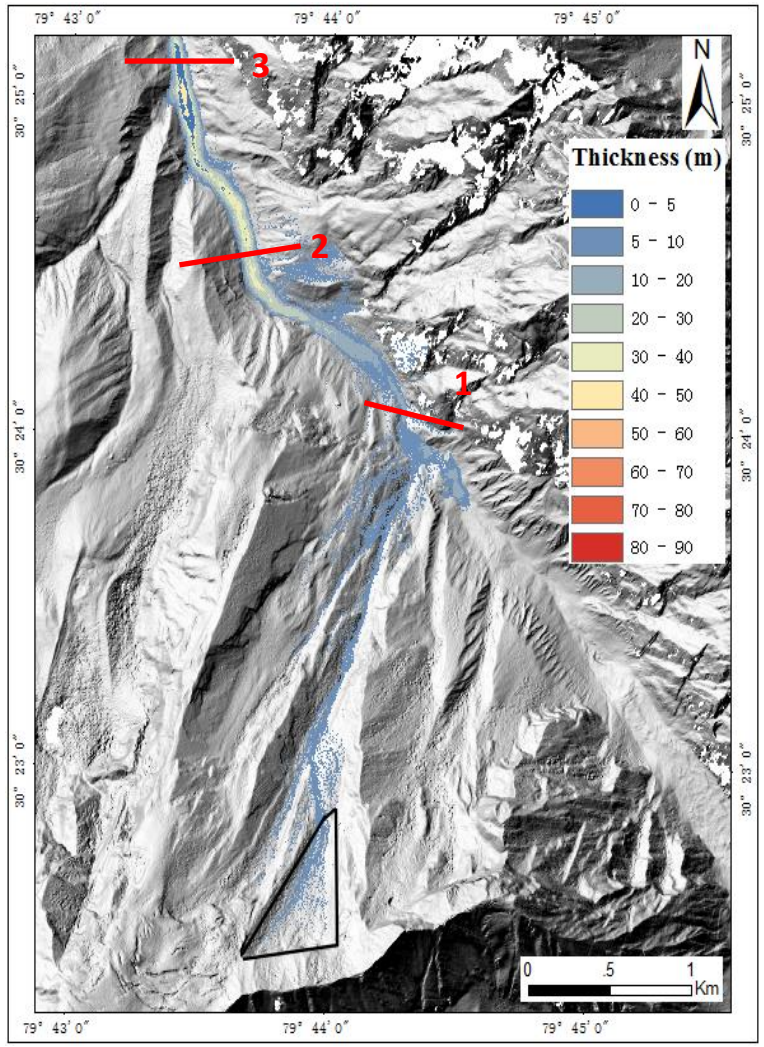
Research tool

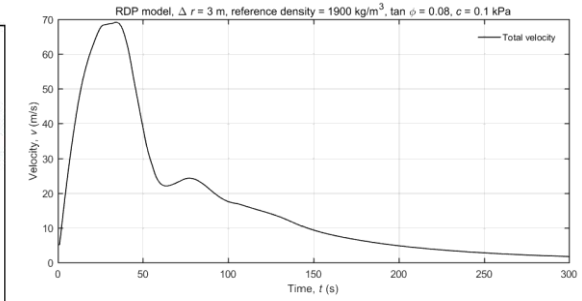


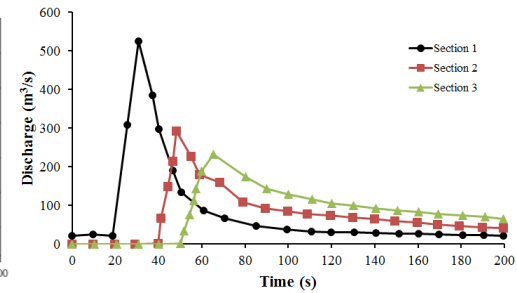
Case site

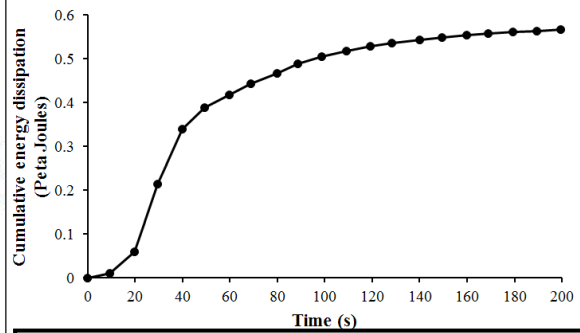


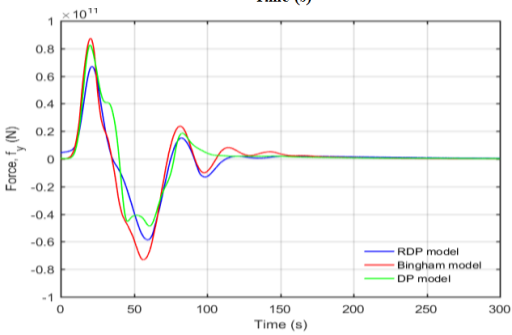
Preliminary results











1. The time of travel for the front velocity from source glacier site to the ~4 km is estimated to be as ~ 100 s. The velocity varied between 70 and 5 m/s, within the initial.

2. The time of travel for the peak discharge from source valley site to the ~1.8 km and ~4 km is estimated to be as ~ 20 s and ~35 s, respectively. The peak discharge varied between 540 and 250 m^3/s from the source valley site to ~4 km.

3. The dissipated energy (~5.5 $\times 10^{14}$ J) can heat to melt 1.65×10^6 m^3 of ice approximate 8.25% of source volume.

4. The force exerted on bed experienced 3-4 back-forth, indicating the flow bumping - bouncing at the valley.