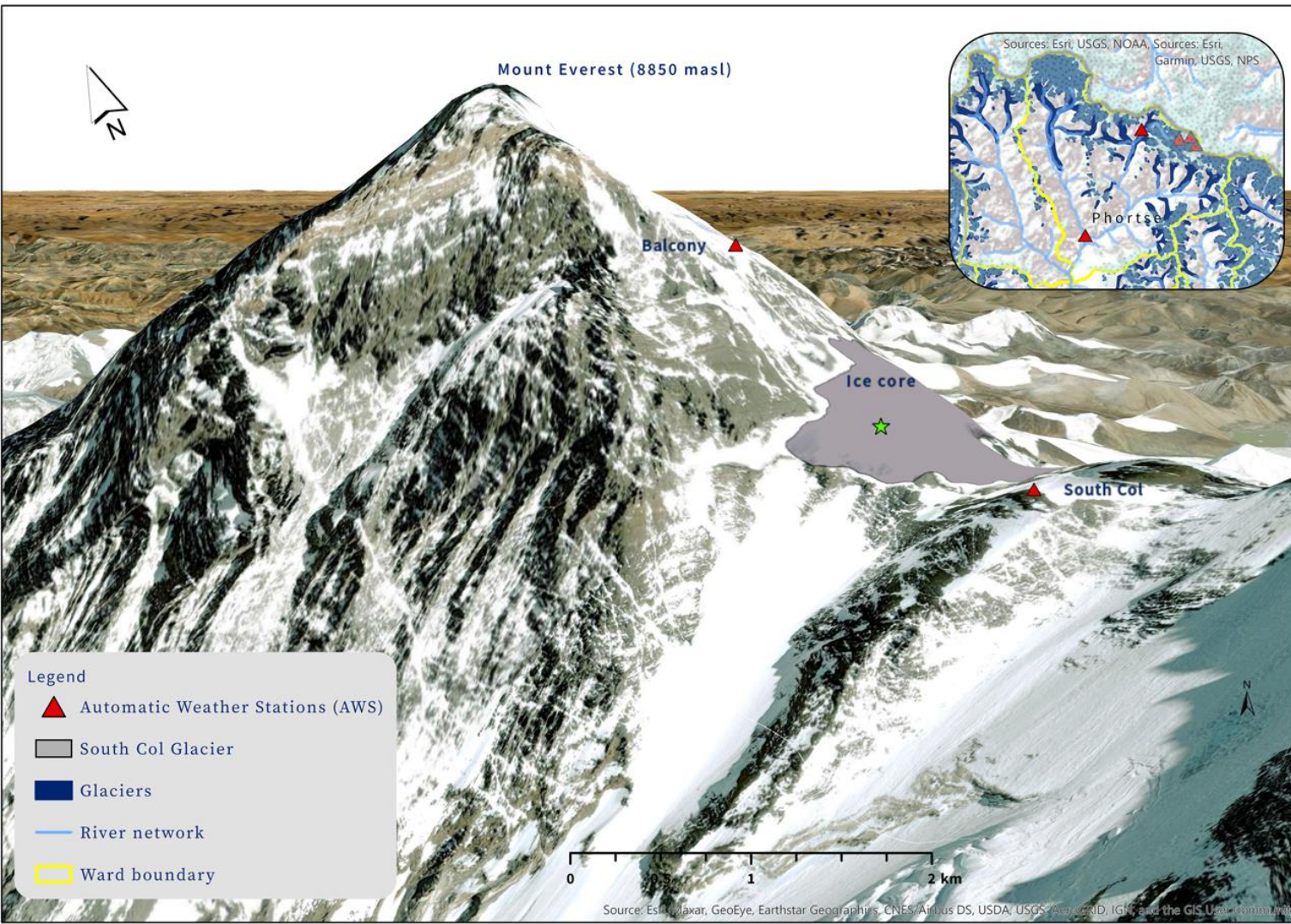
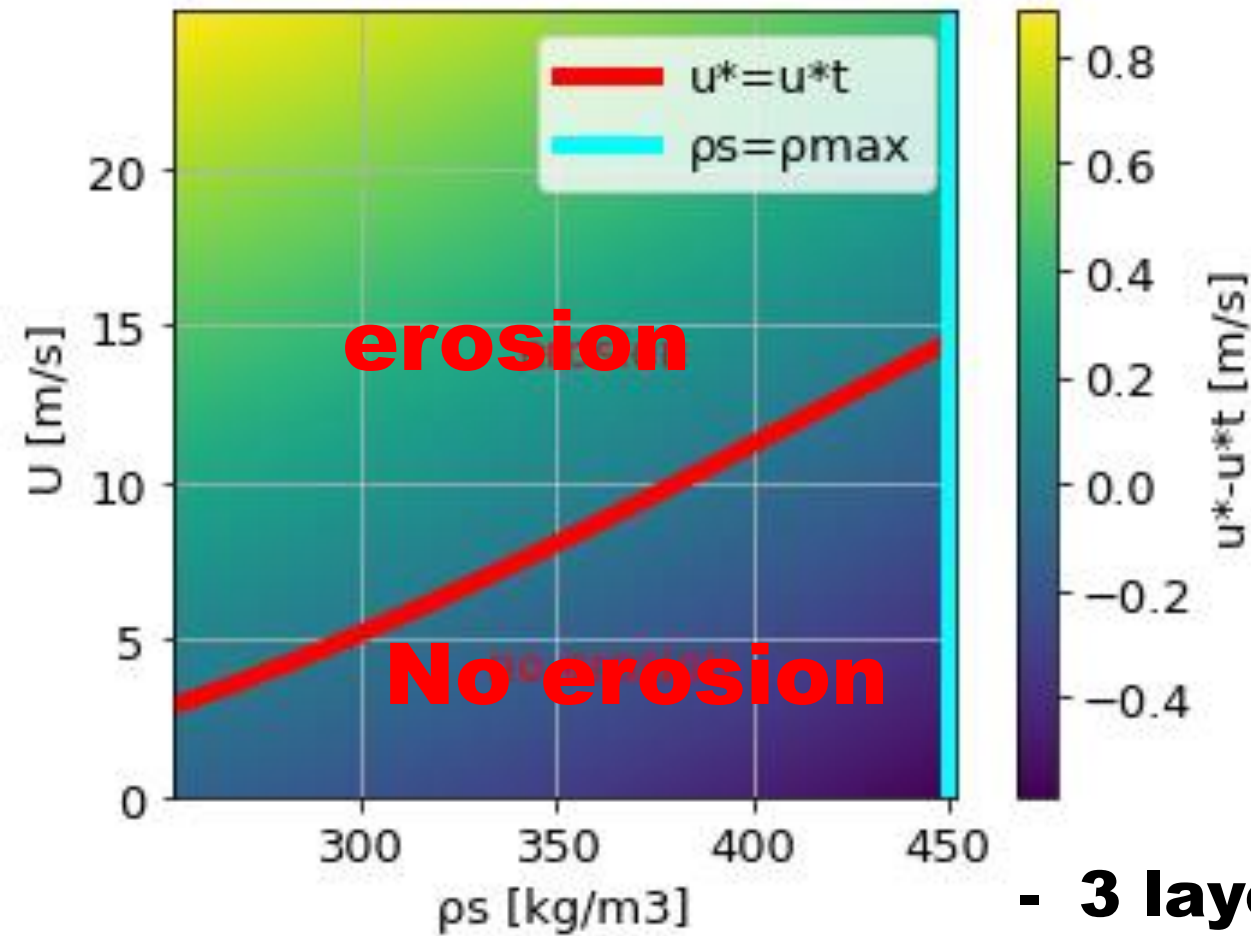


# Modeling snow's erosion by wind on the South Col Glacier (7900-8100m)



- **The highest glacier of Mount Everest.**
- **Automatic weather station at the South Col**
- **In a recent article: thickness: - 2m/year cause to melting**

→ **What is the importance of snow erosion on SCG's mass balance ?**



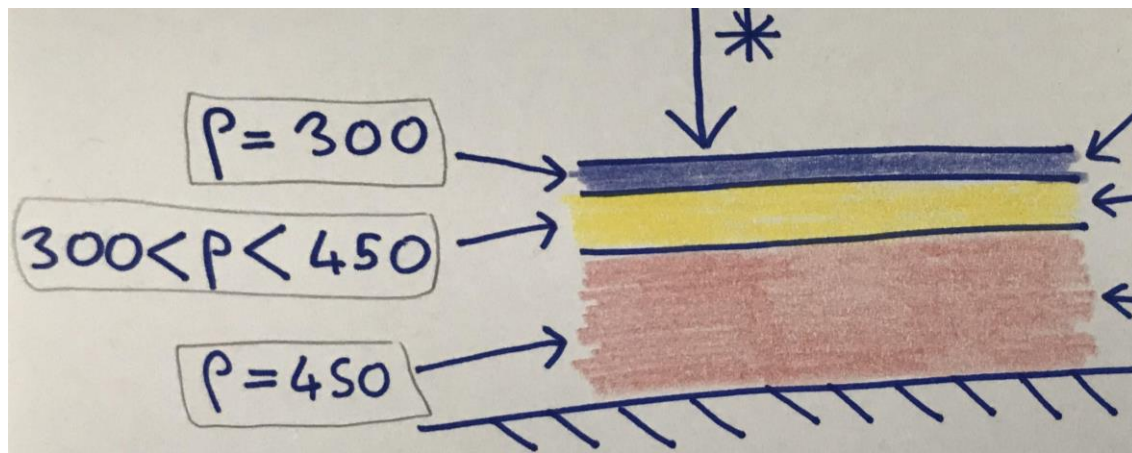
- **Snow's erosion equations from the Antartic regional atmosphere model (MAR)**

- **Erosion if  $u^* > u^*_t$**

**Friction velocity**  
 **$f(U)$**

**$f(\rho_s)$**

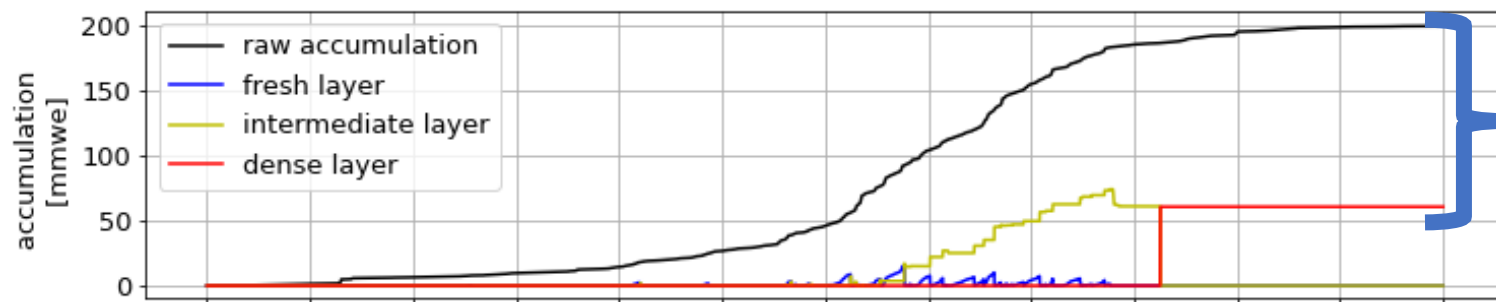
- **3 layers:**



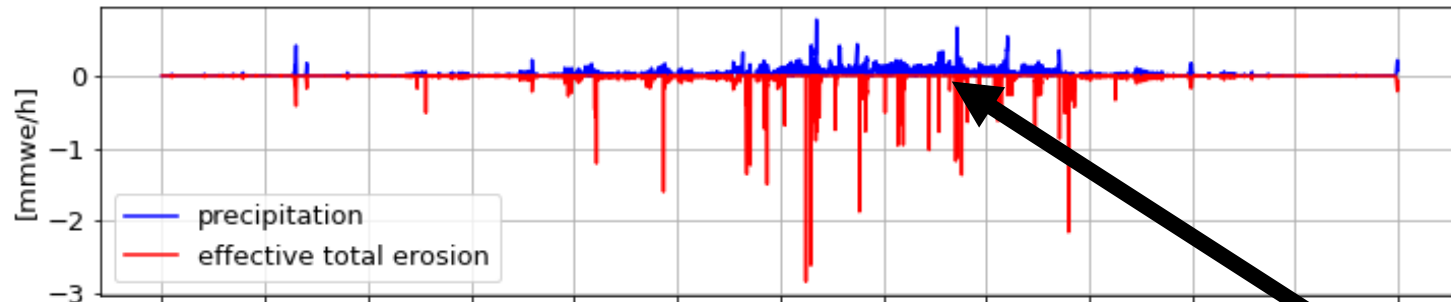
**fresh snow layer**

**intermediate layer**

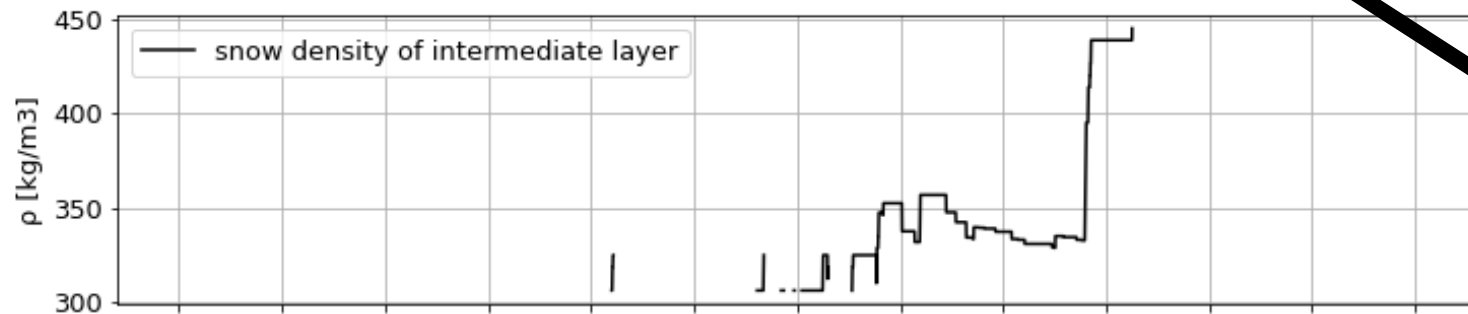
**dense layer**



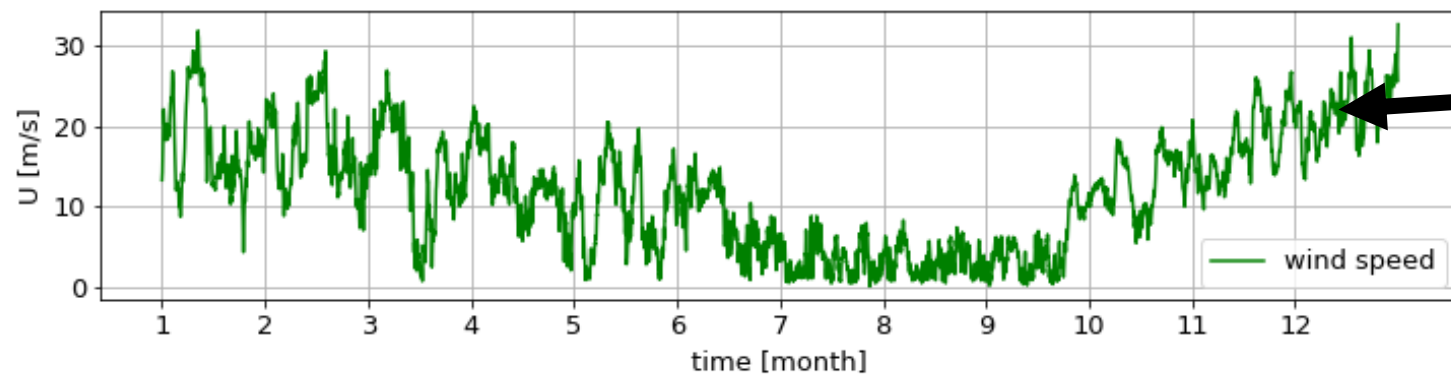
**With standard parameters, in 2010:**



**Raw accumulation = 3\* net accumulation**



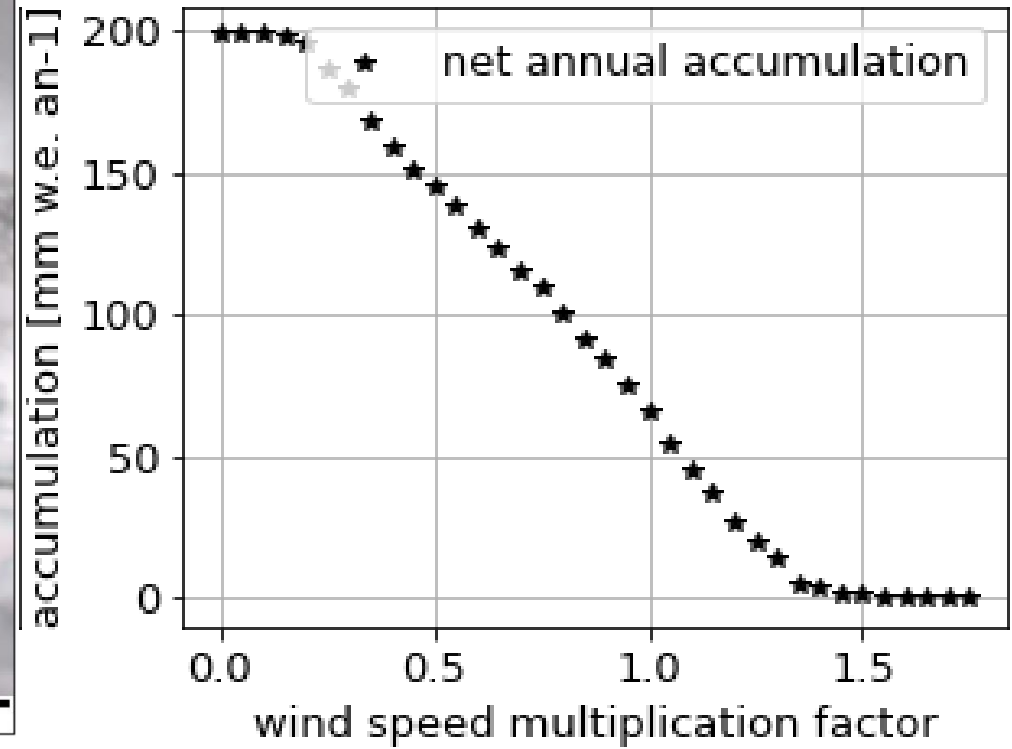
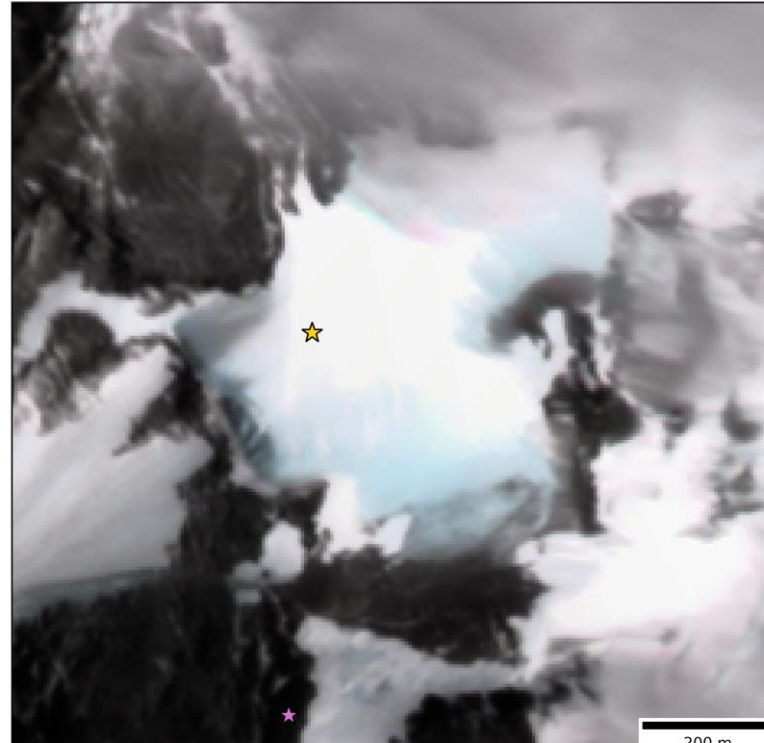
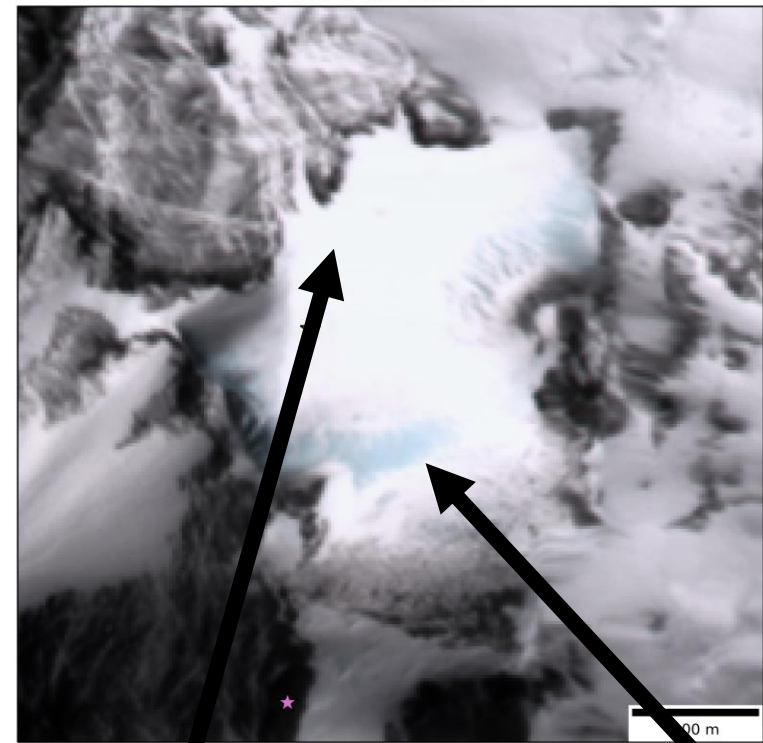
**Monsoon**



**Strong winds in winter**

24 Mar 2020

26 Mar 2020



**Accumulation zone:**

- Avalanche
- Low winds ?

**Ablation zone:**

- ~~Melting/sublimation~~
- high winds

$\Delta \text{wind}(x,y) \Rightarrow \Delta \text{accumulation}(x,y)$

**Wind model**

