

Fit LF  
flux  
profile

1. Calculate LF height-specific saltation fluxes,  $q_{B,i}(z_{B,i})$  (Eq. XX).

2. Fit exponential profile to  $q_{B,i}(z_{B,i})$  to obtain fitting coefficients  $q_{B,0}$  and  $z_{B,q}$  (Eq. XX).

3. Based on fitted exponential profile, obtain predicted fluxes  $q_{pred,i}$  at HF sensor heights  $z_i$  (Eq. XX).

4. Obtain number counts rates  $n_{LF,i}$  for each HF sensor corresponding to LF trap time interval  $T_{LF}$  (Eq. XX).

5. Calculate HF sensor calibration coefficients  $C_{q,n,i}$  as  $q_{pred,i}/n_{LF,i}$  ratios (Eq. XX).

Obtain  
calibration  
coefficients

Calculate HF  
subsamped  
fluxes

6. For high-frequency subsampling time interval  $T_{HF}$ , obtain number counts rates for each HF sensor  $n_i$  (Eq. XX).

7. Multiply number counts rates  $n_i$  by calibration coefficients  $C_{q,n,i}$  to obtain height-specific saltation fluxes  $q_i$  (Eq. XX).

Calculate total saltation fluxes

8a. Fit exponential profile to  $q_i(z_i)$  to obtain fitting parameters  $q_0$  and  $z_q$  (Eq. XX).

8b. Estimate relative importance of each HF sensor height for determining total saltation flux (Eq. XX).

9a. Calculate total flux  $Q$  as product of fitting parameters multiplying fit parameters  $q_0$  and  $z_q$  (Eq. XX).

9b. Calculate total flux  $Q$  as weighted sum of values of  $q_i(z_i)$  (Eq. XX).