The equations

$$V_{M2} = \sum_{k=0}^{n} \binom{n}{k} h^{DSMpost} - \sum_{k=0}^{n} \binom{n}{k} h^{DTMpre} \quad [m^3]$$

$$V_{M1} = B \cdot \sum_{k=0}^{n} \binom{n}{k} h^{DSMpost} \quad [m^3]$$

where B is the elevation value of the rubble heap's base and h is the elevation value (in m) extracted from the DSMpost for each pixel, n = number of pixel.

$$b_j = \frac{\Sigma f_{ij} R_i}{\Sigma f_{ij}}$$

where bj stands for multispectral response in band j, fij is the filter function of j band of satellite sensor (available from the data provider) and Ri the hyperspectral reflectance data.

$$Y(i,k) = \sum_{j=1}^{n} f_j\ (i)\ X_j(i,k) + v(i,k)$$

where:

Y(i,k) = ith pixel spectral response in kth spectral band;
X j (i,k) = ith pixel spectral response of jth endmember in kth spectral band;
fj(i) = pixel fractional abundance of jth endmember;
v(i,k) = pixel residual noise in the kth band;
with $\sum_j^n f_j(i) = 1$ *as basic constraint to fractional pixel reflectance contributions.*