In order to analyze an image to specifically determine charcoal particles from minerals or plant debris, it is important to be able to compare images within a series (TRE, BIL, BLH…) or between series. However, some images within a series, or even full series (BLH) can display a background luminosity very different from other pictures, because contrast was automatically adjusted during the acquisition. Images need to be compared altogether to determine specific colorimetric parameters corresponding to the nature of charcoal particles. In that purpose, luminosity has to be adjusted to display similar background for every image from the different series.

Intensity of split red (R), green (G), and blue (B) channels were measured on the background top left region (960x960 px). R_{bk}, G_{bk} , B_{bk} data were extracted and saved as tables. Data analysis performed on Excel revealed similar red and green mean intensity distribution for every series, and it appeared a significative difference of intensity for the blue channel only, red and green channels displaying a similar distribution for the three series. A blue channel correction coefficient was defined as follow for each image:

$$\text{B correction coefficient} = \frac{R_{bk}/1.08 + G_{bk}/1.04}{2} - B_{bk}$$

This value (which can either be positive or negative) is added to blue channel to correct its global intensity.