A True color image (file name: “Image\_BBSmoke\_Over\_Tricity.jpg”) was taken over Richland WA during biomass burning event. The true color image can be saved in limited specific formats (e.g., jpg, png, tiff etc). These formats write image data in three-dimensional data matrix (e.g., 1613 x 2169 x 3 for the give image). The first two dimensions are height and width of the image (number of pixels). The third dimension is Red (R), Green (G), and Blue (B) color indexes (0-255) for the given pixels.

**Exercise:**

1. Open the True color image file: Image\_BBSmoke\_Over\_Tricity.jpg
2. Open the same image into panchromatic format (Image\_BBSmoke\_Over\_Tricity\_panchromatic.jpg)
3. Have a look on the individual R, G, B color indexes/components of the data from true color image.
4. Try to investigate the pdf distribution of these RGB components
5. Try to investigate the pdf distribution of the panchromatic image
6. Do the pdfs from (d) and (e) look same or different? Why?

**Image and data files provided:**

Image\_BBSmoke\_Over\_Tricity.jpg

Image\_BBSmoke\_Over\_Tricity\_panchromatic.jpg

Image\_data\_R.dat

Image\_data\_G.dat

Image\_data\_B.dat

Image\_data\_panchromatic.dat