# CLARIFIACTION ON SPECTRAL PLOTS

The digital values in L1GST dataset represent absolute radiance values stored as 16-bit signed integers with a scaling factor assigned to each band. The actual radiance values vary from zero to approximately 30,000. (Land et al., 2005). The SWIR bands have a scaling factor of 80 and the VNIR bands have a scaling factor of 40 applied. Hence to achieve the actual radiance value:

-VNIR bands (B008-B057, 426.82nm - 925.41nm): L = Digital Number / 40

-SWIR bands (B077-B224, 912.45nm - 2395.50nm): L = Digital Number / 80

Hence before implementing QUAC atmospheric correction, band bands are removed and image is converted into actual radiance image. The spectral plot for Urban1, Urban2, Forest1 and Forest 2 locations are shown below. As the polygon shapes were lesser than the tile size, the coordinates of center of polygon are taken and spectral plots are constructed for the same.
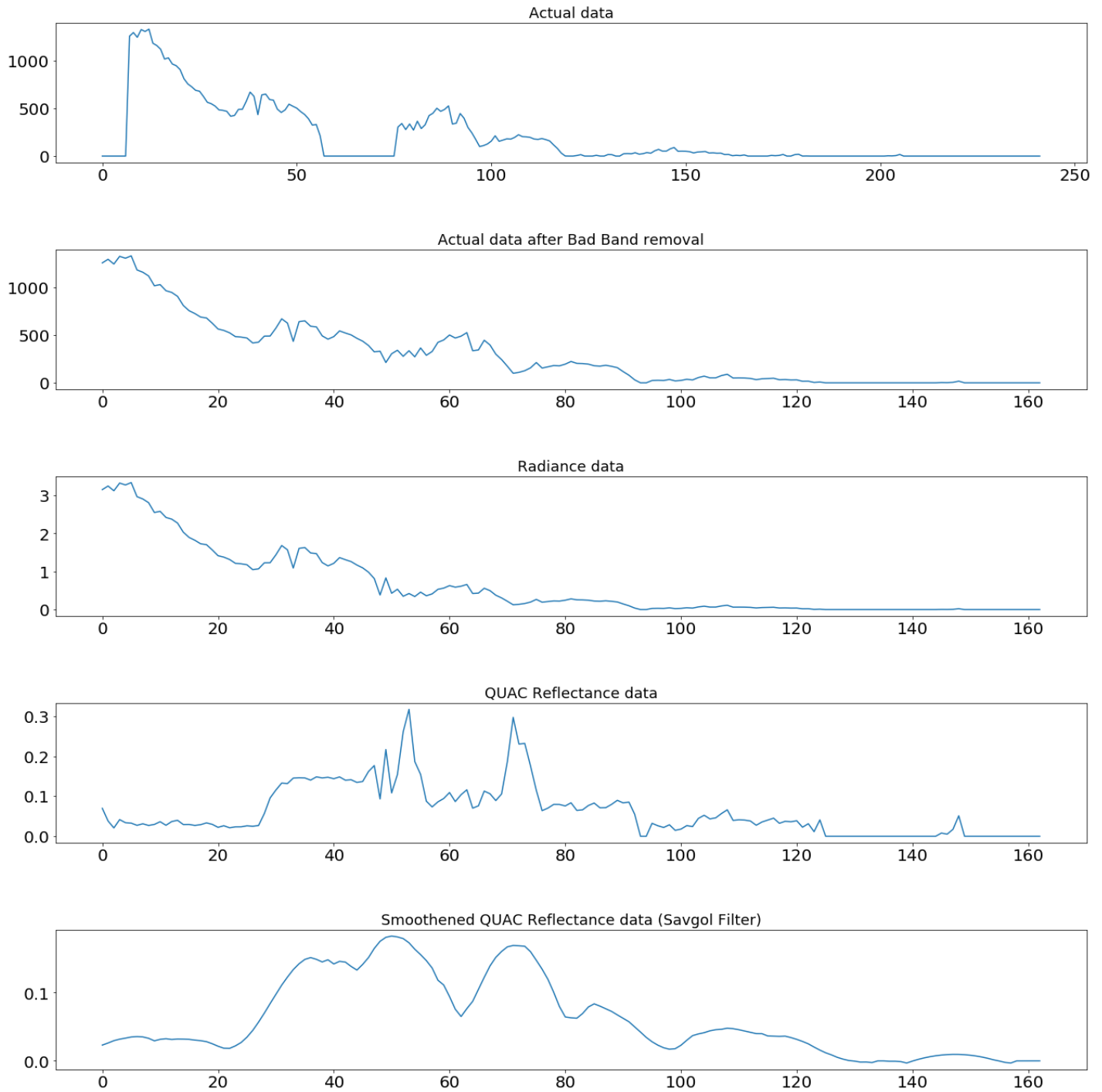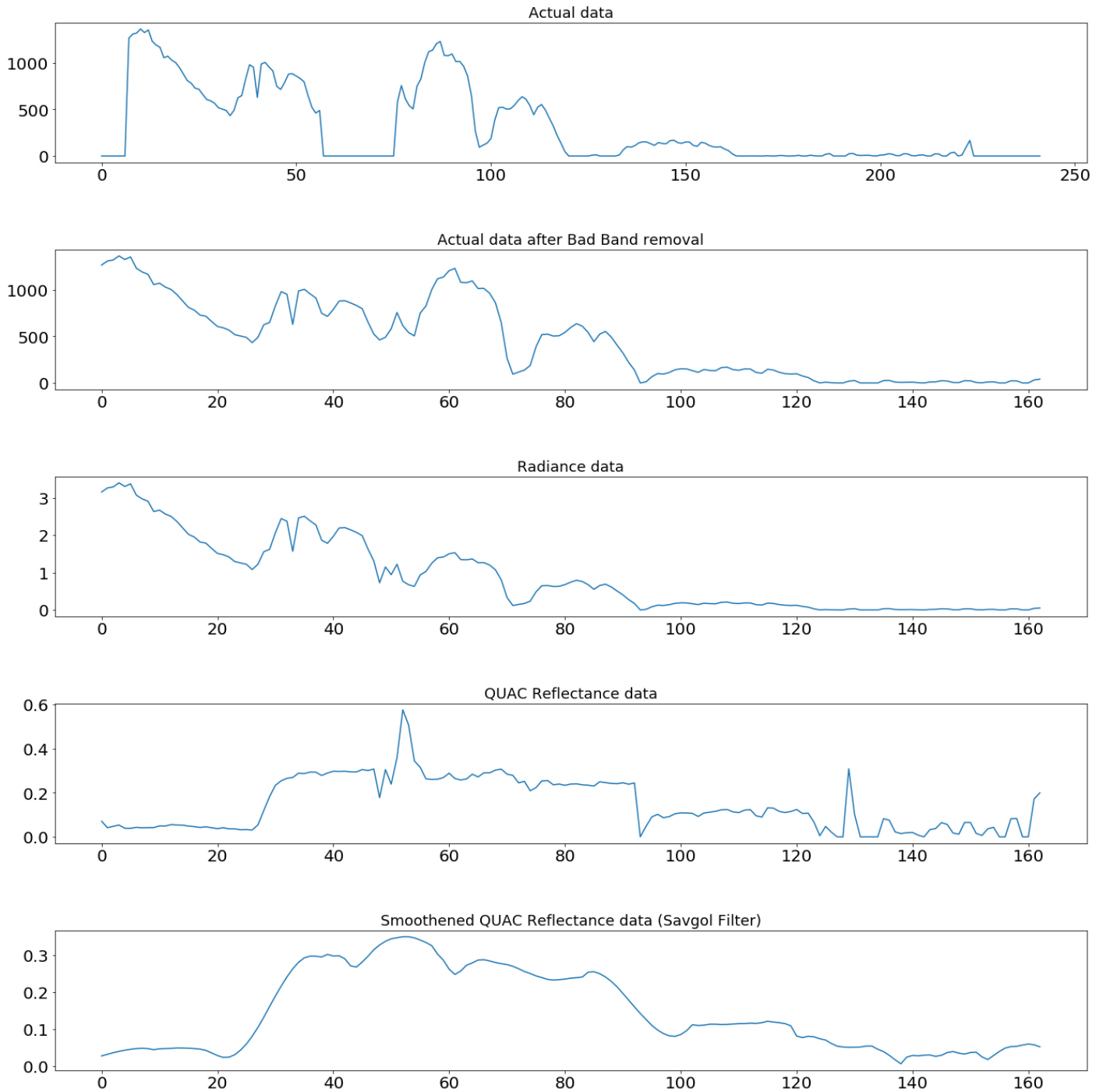

Spectral profile of Urban1
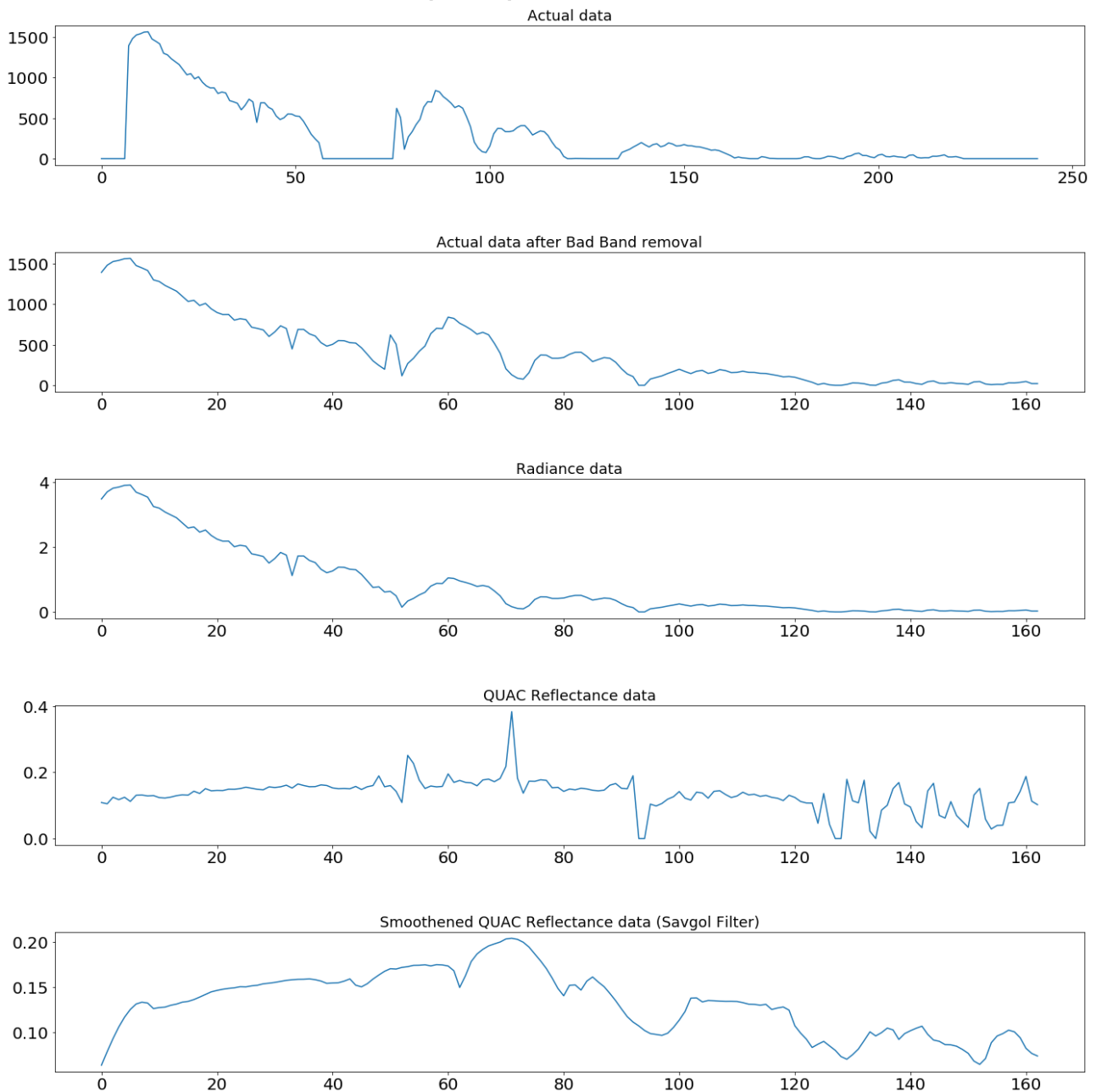
Spectral profile of Urban2
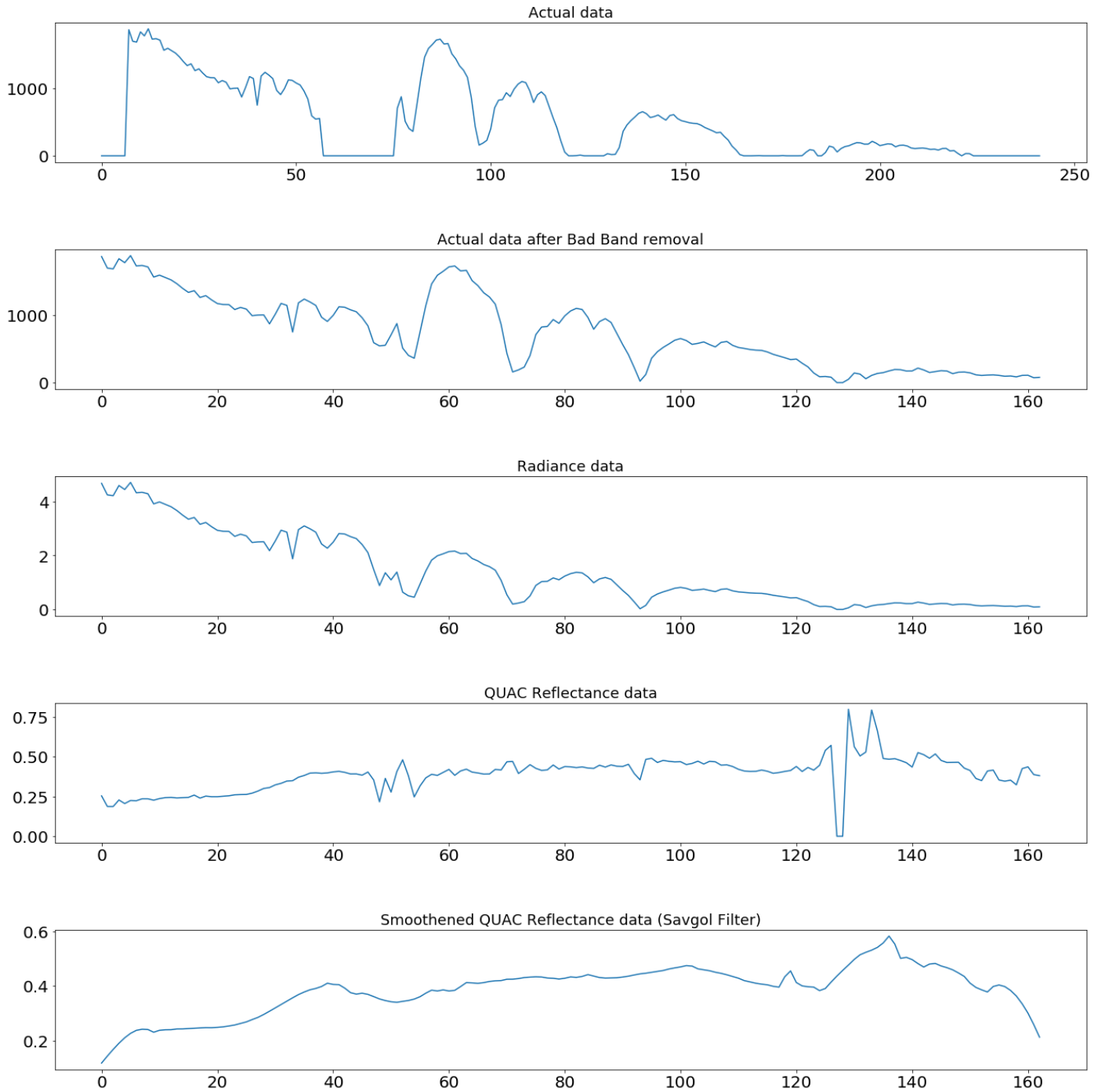
Spectral profile of Forest1

Spectral profile of Forest2

All the codes and results are available on https://github.com/Sumana18/Hyperspectral-Image-Processing/blob/master/Spectral%20Plots.ipynb