**Pycam manual**

**Introduction**

Much, but not all, of pycam implements the pyplis (<https://www.mdpi.com/2076-3263/7/4/134>) package as a backend, since a lot of time has already been put into developing this package and it is quite a powerful tool for SO2 camera data analysis.

**Background modelling**

The background intensity is used to find the optical depth of each band, and subsequently, the SO2 differential optical depth. It is therefore critical that a good estimate of the background intensity is

There are a range of options available for background intensity modelling in pycam. Options 0-6 and 99 are all pyplis methods as described in Table 2 therein. Option 7 is a very basic method which uses vignette correction and then finds the average intensity in the ambient region (defined by the rectangle on the SO2 image of the Analysis tab), for each band separately. This intensity is taken as *I0* and tau is calculated from this.