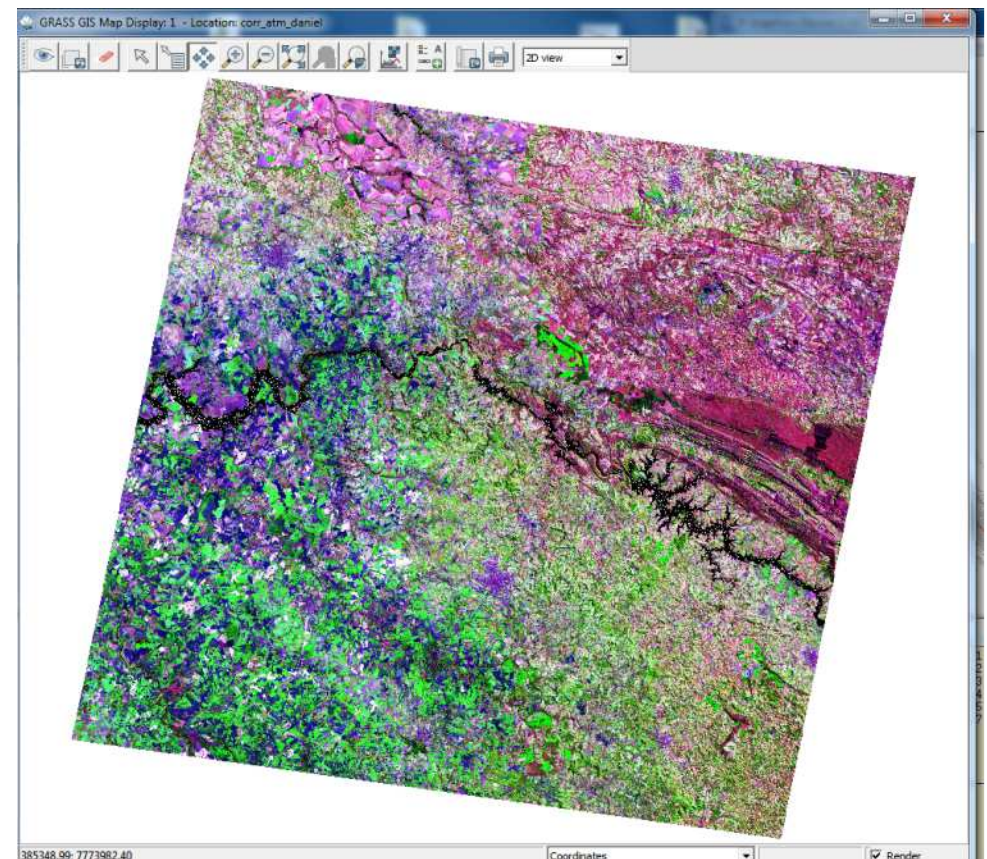


# ENVI FLAASH vs. GRASS i.atcorr

Testing on a Landsat TM5 image

# FLAASH vs. i.atcor

- Atm correction performed on same image
- TM 5 from 30 aug 2004
- Path; row: 220 / 074



# Correction Parameters

## FLAASH

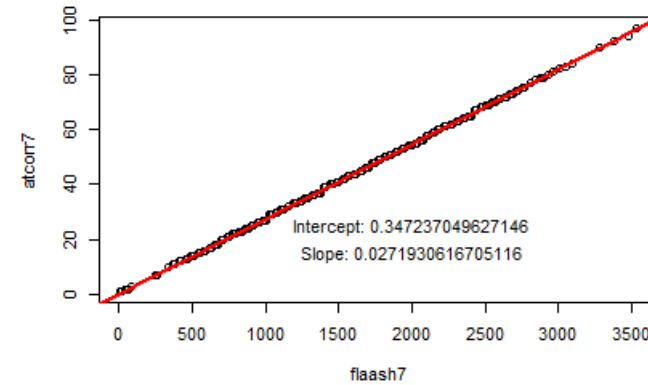
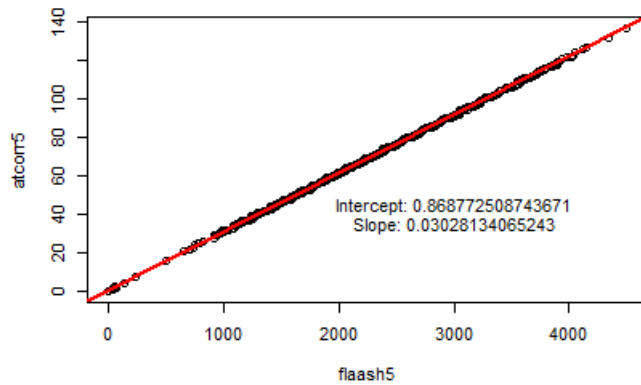
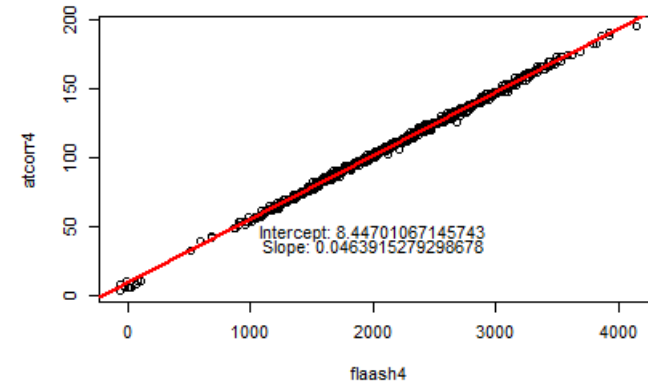
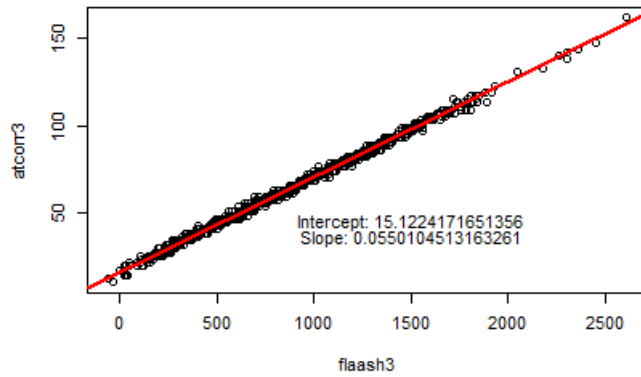
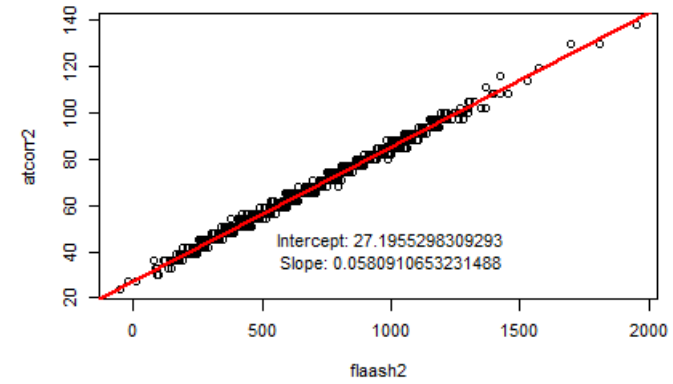
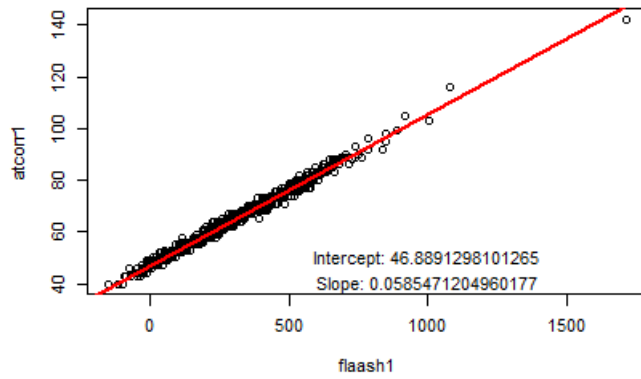
- Same date, elev, time etc
- Atmosphere model 6
  - US Standard
- Aerosol: rural
- Visibility: 58.33
- Data scaled from 0,10000

## i.atcoor

- Same date, elev, time etc
- Atmosphere model 6
  - US Standard
- Aerosol: continental
- Visibility: 58.33
- Data scale: 0,255
- Ran on same radiance image used by FLAASH
- Neg. radiances converted to null prior to i.atcoor

# Comparison

- 1393 random points
- Extracted radiance, flaash and i.atcorr reflectance results for each point
- Good linear regression between flaash and i.atcorr for all bands ( $r^2 > 0.98$ )
- Regression coefficients between flaash and i.atcorr differ for each band.
  - Shouldn't this be stable?
  - How can we compare reflectance between models and from measured values?



# Comparison

i.atcoor / flaash	intercept	slope	R2
B1	46.9	0.058	0.98
B2	27.19	0.058	0.99
B3	16.12	0.055	0.99
B4	8.45	0.046	0.99
B5	0.86	0.030	0.99
B7	0.35	0.027	0.99

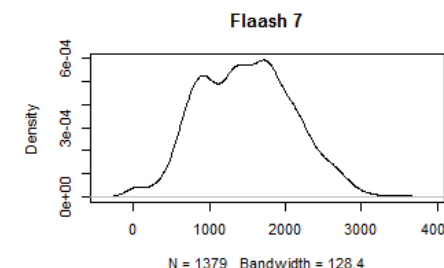
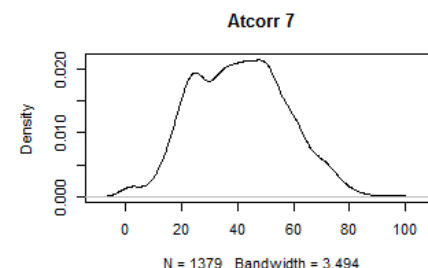
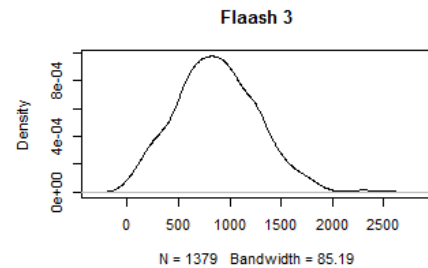
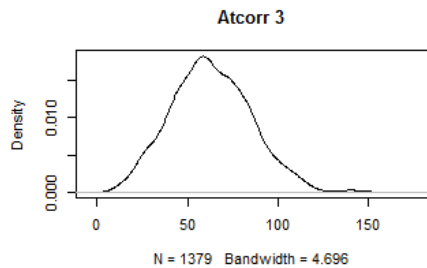
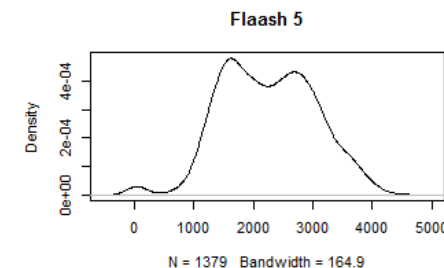
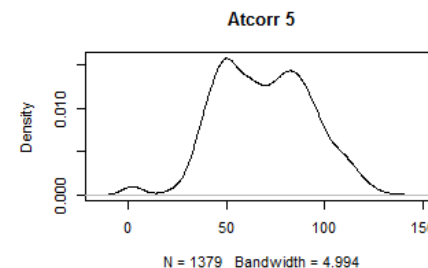
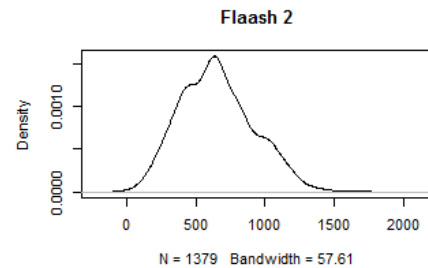
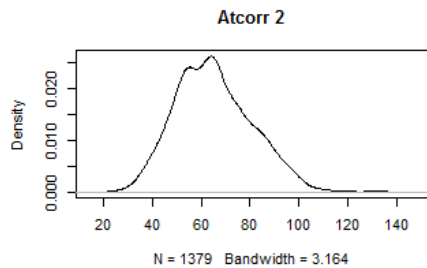
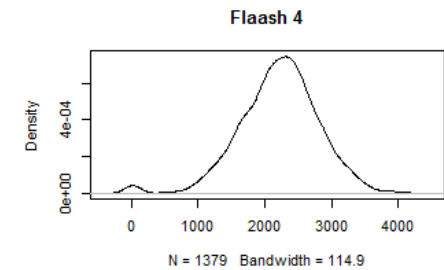
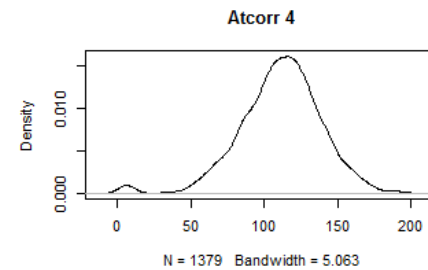
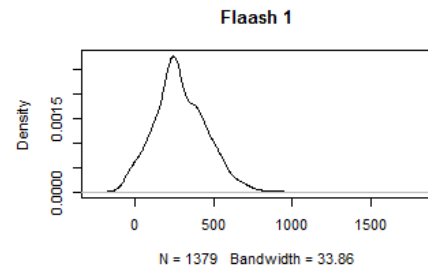
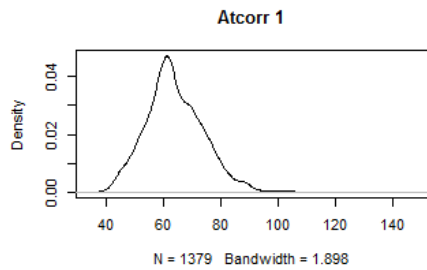
Model atcorr ~flaash

Shouldn't the regression coefficients between flaash / atcoor be the same for all bands?

If both models output reflectance, results should be similar

I suspect that a reflectance DN in i.atcoor of 255 is not the max possible reflectance (1) but the max reflectance in the scene. This would explain the different slopes for each band and mean that a reflectance of 255 does not mean the same for every image.

# Density plots



Histogram for the different bands looks very similar, just the values that are not easily comparable