Comparison of B&P, BDM, and Bremen ozone absorption cross-sections at SBUV,TOMS, and Dobson wavelengths

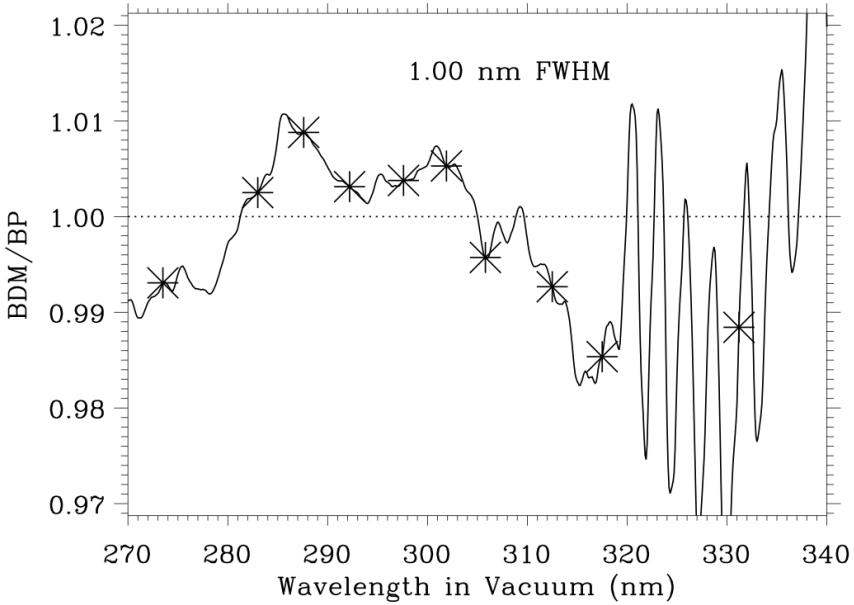
P. K. Bhartia

NASA Goddard Space Flight Center

Greenbelt, Maryland, USA

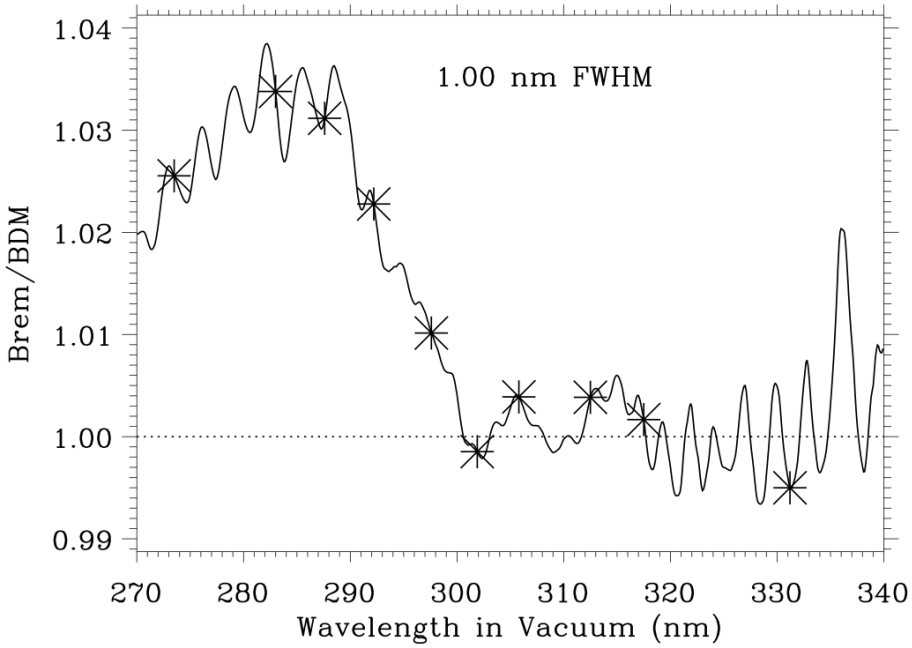
Comparisons at SBUV & TOMS Wavelengths

(TOMS λ: 317.5 & 331.2 nm)



BDM and BP agree within ±1% at λ<310 nm. BP data are not very good above 320 nm. Difference at TOMS 317.5 nm is rather large (1.5%).

Bremen data do not look right at λ<300 nm. At longer wavelengths the differences with BDM are insignificant.



SBUV & TOMS wavelengths are marked with stars

Conclusions

- TOMS & OMTO3 total ozone values increase by 1.5% in going from BP to BDM. But change from BDM to Bremen is insignificant.
- Change in SBUV total ozone is small (<0.5%) irrespective of which 3 cross-sections are used.
- SBUV profiles are not significantly affected in going from BP to BDM, but going to Bremen cross-section will very likely make the profiles worse in upper strat where NOAA/17 SBUV/2 agrees well with Aura/MLS.
- For these reasons the SBUV & TOMS team plans to stay with BDM in the near future.

Effect on Dobson double pairs

Using B&P with D102 slit function

Temp	-40C	-45C	-50C
AD	1.425	1.416	1.407
CD	0.450	0.447	0.444

Using Bremen with D102 slit function

Temp	-40C	-45C	-50C
AD	1.421	1.413	1.406
CD	0.449	0.446	0.442

Effect of changing from B&P to Bremen is quite small. Very little change in temperature dependence.