

Residual Polarization Sensitivity of MODIS Terra

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MODIS Terra Update

OBPG' Polarization Correction is the basis of C6 and C6.1 processing:

Using Aqua L3 retrievals (as true), compute expected TOA radiances for Terra view geometry (over open **Ocean**);

Based on that, compute M_{11} , m_{12} , m_{13} ;

$$L_m/M_{11} = L_t + m_{12} * Q + m_{13} * U$$

L_m : measured TOA radiance (Terra)

L_t : expected TOA radiance (from L3 Aqua)

Q, U : linear Stokes vector components, modeled from Rayleigh and glint

M_{11} , m_{12} , m_{13} : fitted instrument characterization parameters (depend on band, MS, detector, scan angle)

Looking at the Barrow, Alaska (C6.1 L1B, 2015)

MODIS Terra shows residual mirror-side polarization sensitivity within $\sim 10^\circ$ of max polarization (scat. angle 90°).

