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Multispectral measurements of boundary layer CO from MOPITT

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Using both thermal infrared (TIR) and near infrared (NIR) channels of MOPITT (Measurements Of Pollution In The Troposphere) on EOS-Terra we demonstrate the first multi-spectral retrievals of carbon monoxide (CO) from space. Exploiting both TIR and NIR channels has been possible due to recent advances in understanding the MOPITT instrumental-geophysical radiance errors associated with sub-pixel variability of the surface reflectance. These observations show a large increase in sensitivity to boundary layer CO over currently available TIR-only measurements and have the potential for significantly improving emissions estimates. Since CO is relatively long-lived ($\sim$ 3 months), satellite observations of CO have long been used as a tracer for atmospheric pollution transport. These multispectral measurements will add new information about transport processes from the boundary layer to free troposphere.