

**VALIDATION OF MODEL GENERATED DOWNWELLING  
RADIANCES/IRRADIANCE FOR REMOTE SENSING APPLICATIONS.**

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The objective of this research is to validate the downwelling sky radiance field predicted by an atmospheric radiative transfer code (MODTRAN) against field measurements. Accurate knowledge of this illumination field is critical in processing hyperspectral remote sensing data, particularly where atmospheric compensation is concerned. The fidelity (both spatial and radiometric) of the predicted radiance field is also crucial in scene simulation models. Often a clear sky condition is assumed in the analysis of a remote sensing imagery. Whilst this maybe true in dry desert areas, this assumption does not hold for coastal areas where clouds are prevalent. A technique for modeling of the complex patterns of a clouded sky will be presented along with the radiance field reaching a sensor on the ground. Experiences with the acquisition of the field measurements will be discussed along with a recommendation for protocols to capture the necessary information to allow for accurate modeling of complex sky conditions.