

FUSION OF MODIS-MISR DATA TO ESTIMATE SINGLE SCATTERING ALBEDO FOR DIFFERENT AEROSOL TYPE

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Abstract: The purpose of this study is to discuss the absorption of smoke from Southeast Asia bio-mass burning and the absorption of dust in West Africa, and retrieve the single scattering albedo (SSA) by fusion of satellite data and ground-based data. The concept of retrieving method is choosing a pair of image in the same area, and the surface properties on hazy day should be similar to the surface properties on clear day. In the results, when the aerosol optical depth is more than 0.5 on hazy day, the error percentage of retrieving SSA can be less than 3%. The averaged retrieving SSA in the Northwest Thailand are 0.88 (blue band), 0.84 (red band), 0.84 (NIR band) and 0.94, 0.91 and 0.88 in the Southeast Thailand. From the trajectories analysis, the different aerosol source regions could be the possible reason for different absorption. The retrieving SSA of dust in blue, red and NIR spectral bands the West Africa are 0.91, 0.95 and 0.94, respectively. In the summer season, the SSA values are much lower. The prevailing wind direction in the summer season is from north, and the area could be polluted by strong absorption of aerosol from other areas, such as sea salt. The aerosol source is the main factor to exhibit the absorptive characteristics of aerosol.