



## **Some retrieval results from new satellite imagers for aerosol and cloud climate studies**

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New imagers have been launched and planned for launch in these several years, including the Sentinel series imagers and Japanese Himawari-8/AHI, GOSAT/CAI, GCOM-C/SGLI, and future GOSAT2/CAI2, Earth Explorer/EarthCARE/MSI and others. These imagers have better sensitivity, higher spatial resolution, multi-angles, polarization and wider spectral coverage including near-ultraviolet wavelengths. With such improved technologies, new aerosol and cloud remote sensing algorithms have been also developed and applied to the large volume data from these imagers. A new trend is a use of combined algorithms of multi-dimensional data, i.e. multi-angles, multi-wavelengths, multi-times, and multi-pixels and polarization, that makes it possible to retrieve better land aerosols optical properties, simultaneous aerosol and cloud information from mixed pixels, simultaneous retrieval of aerosols and ocean colors, and many other geophysical parameters. In this talk, we like to introduce some new results from AHI, CAI, and SGLI to discuss advantages of the new imagers and algorithms. The talk will be extended to how to use these data for aerosol data assimilation and aerosol impact studies using MIROC climate model and NICAM high resolution model.