

### 3.044 Development of an aerosol reanalysis product - JRAero.

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Abstract:

As well as meteorological reanalysis products (e.g., ERA, MERRA and JRA), reanalysis products for aerosol components are under development and ready for research use. A global aerosol reanalysis product named the Japanese Reanalysis for Aerosol (JRAero Version 1) was constructed by the Meteorological Research Institute (MRI) of Japan Meteorological Agency (JMA) and Research Institute for Applied Mechanics (RIAM) of Kyushu University (Yumimoto et al., Geosci. Model Dev., 2017). The reanalysis employs a global aerosol transport model developed by MRI (MASINGAR mk-2), a 2-dimensional variational assimilation method, and maps of aerosol optical depth (AOD) from the Moderate Resolution Imaging Spectroradiometer (MODIS) onboard Terra and Aqua satellites. Reanalysis products, including global distributions of AOD (for total and each aerosol component), surface PM<sub>2.5</sub> concentration, and deposition amounts etc. are now available through the JRAero web site (<https://www.riam.kyushu-u.ac.jp/taikai/JRAero/>), and will be useful for various applications (e.g., climatological analyses of aerosol and its climate effect, epidemiologic studies of PM<sub>2.5</sub>, estimates of aerosol exposure and its health impact, and determination of the initial and boundary conditions of numerical models). In this presentation, we will overview setup of the reanalysis and indication of its quality as well as some research results with the reanalysis product.