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**Latest progress of eXtensible Bremen AErosol Retrieval
(XBAER) and the AOT trend analysis over the Arctic
Ocean during the past decades from satellite
observations**

Linlu Mei
(IUP)

Abstract

The newly developed eXtensible Bremen AErosol Retrieval (XBAER) has the objective of delivering seamless and high-quality dataset for aerosol and cloud optical properties for the investigation of the impacts of pollution and assessment of climate change. The standard XBAER algorithm can retrieve aerosol optical properties such as aerosol optical thickness (AOT) over both dark and bright surfaces using a unified surface parameterization. Recently, XBAER has been further optimized to retrieve both cloud and aerosol properties.

Based on the latest developments of current existing satellite aerosol products, the AOT trend over the Arctic Ocean during past decades has been analyzed in the AC3 project. The study tries to understand the changes of Arctic aerosol loading with respect to local sources and meteorological conditions linked to transport effects.