

Using satellite based AOD to estimate particulate matter in Qatar

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Abstract

We used a combination of daily aerosol optical depth (AOD) data from the Moderate Resolution Imaging Spectro-radiometer (MODIS) and ground measurements using a Dylos air quality monitor (a laser particle counter) to estimate particle matter air quality over a number of locations throughout the country of Qatar, in the Middle East. An empirical relationship between AOD and PM air quality was obtained from these datasets (linear correlation coefficient of 0.78) and was used to evaluate annual and seasonal trends in air pollution in Qatar since 2012.

Poster Presentations

2019 CSPP in Chengdu, China

P1. Bearson, Nick (SSEC): *CSPP CLAVR-x*

Nick Bearson, Andrew Heidinger, Denis Botambekov, Kathy Strabala, Liam Gumley

The Clouds from AVHRR Extended System (CLAVR-x) is a processing system developed at NOAA/NESDIS and UW/CIMSS for generating quantitative cloud products in real-time from AVHRR, MODIS, VIIRS, and other sensors. CLAVR-x was first packaged and released for the direct broadcast community as part of the CSPP suite in May 2014 and receives ongoing support. We report on the capabilities of CSPP CLAVR-x and improvements users can find in the latest version, including NOAA-20 and MetOp-C support, improved output configuration, and algorithm updates.

P2. Botambekov, Denis (SSEC/University of Wisconsin-Madison): *Cloud Properties from FY-4 in CLAVR-x Processing System.*

Denis Botambekov, Andrew Heidinger, Steve Wanzong, Yue Li, Andi Walther, William Straka

The first version of the CSPP CLAVR-x (The Clouds from AVHRR Extended) was released in 2013. The CLAVR-x processing system with CSPP wrapper provides users official NOAA Enterprise cloud algorithms, some surface and other products for polar-orbiting AVHRR, MODIS, VIIRS, and Geostationary Imagers ABI, AHI, SEVIRI, COMS. Since then many users all over the world are using the CSPP CLAVR-x.

The new FY-4a - second-generation geostationary satellite, positioned at the 105E longitude, is added to the CLAVR-x. The results of performance of cloud detection and cloud properties algorithms will be presented with comparisons to Himawari-8/AHI and collocated CALIPSO/CALIOP data.

P3. Costa, Ozeas (The Ohio State University): *Using satellite based AOD to estimate particulate matter in Qatar*

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P4. Haibo, Xu (National University of Defense Technology): *New Method for Determining Cloud-Top Height from Stereoscopic Observation based on FY-4A and Himawari-8 satellites*

Xu Haibo, Du Huadong

High temporal and spatial resolution of new generation geostationary satellite such as FY-4A and Himawari-8 contributes to the improvement of geometric method for determining cloud top height (CTH). A new method based on Convolutional Neural Network (CNN) has been used to accurately match images from FY-4A and Himawari-8 respectively, and CTHs are determined through spherical and plane triangular relationships of satellites, earth core, projected-cloud and true-cloud. The new method has been applied to retrieve CTHs in South China Sea between August to September 2018. A comparison between the results and CloudSat data is conducted for validation.



CSPP Users' Group Meeting

25-27 June 2019
Shangri La Hotel, Chengdu China

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2019 CSPP Users' Group Meeting

The 4th Community Satellite Processing Package (CSPP) Users' Group Meeting will be held from 25–27 June 2019 at the Shangri-La Hotel located in the heart of Chendgu, China. The goal of the meeting is to bring together the worldwide community of CSPP Low Earth Orbit (LEO) and Geostationary Earth Orbit (Geo) users. We shall discuss issues relevant to reception, processing, applications, and innovations of data acquired by direct broadcast from meteorological satellites including NOAA-20, Suomi NPP, GOES-16/17, FY-3/4, Metop, Himawari, EPS-SG, Meteor-M and GCOM. Presentations related to other satellite missions are also welcome. The meeting language will be English.

Topics for discussion may include:

- Local usage and application of CSPP LEO and CSPP Geo software products;
- CSPP Level 2 software overview and updates;
- CSPP software technical topics, including related software packages (e.g., AAPP);
- Status of current and future environmental satellite missions and sensors;
- Technical innovations in algorithms, processing and applications, including cloud processing, artificial intelligence, machine learning and very low latency solutions;
- Feedback and guidance to the CSPP LEO/Geo development teams on current products and future priorities;
- Satellite data analysis and visualization applications;
- LEO and Geo ground stations and hardware.

ABSTRACT SUBMISSION DEADLINE: 15 April 2019

- Please submit your abstract when you register for the meeting at the website shown above.
- Abstracts submitted by 15 April 2019 will be considered for the technical program, to be announced by 25 April 2019.

REGISTRATION:

- Registration and abstract submission is currently open.
- A registration fee of \$275 will be payable through a separate website shortly.
- After 15 May 2019, the registration fee increases to \$325.
 - The registration fee covers meeting facilities, morning and afternoon break refreshments, lunches, an ice breaker, a banquet, and group activity.

CO-HOSTS:

- National Satellite Meteorological Center (NSMC), China Meteorological Administration (CMA), Beijing China
- Chengdu University of Information and Technology (CUIT), Chengdu China
- HUAYUN ShineTek, Beijing China
- Cooperative Institute for Meteorological Satellite Studies (CIMSS)/ Space Science and Engineering Center (SSEC), University of Wisconsin–Madison, WI USA

Important Documents:

[Call for Papers \(PDF\)](#)

[Flyer \(PDF\)](#)

Deadlines:

Abstracts by 15 April 2019

Registration Fee \$275
by 15 May 2019

Hotel reservations by 25 May 2019



Exterior view of Shangri-La Hotel in Chendgu, China at night.