

Abstract

- Goddard Earth Sciences Data and Information Services Center ([GES DISC](#)) distributes over a thousand of the datasets.
- GES DISC regularly collects [published works](#) referencing these datasets from a wide range of bibliographic sources such as [Web of Science](#), [Scopus](#), [Crossref](#), [Google Scholar](#), [OpenAlex](#), and [DataCite](#).
- Topics and keywords assigned to publications collected from different sources cannot be guaranteed to be interchangeable.
- To address this all publications undergo uniform processing that allows assignment of a publication to one or more applied research area.
- A filtering capability has been added to the publications library to enable the sorting of publications by Applied Research Areas. In this way, data archive users can find published works relevant to their applied research interests.

Use Case

- Publication:** Katpatal, Y.B., Patel, V.K. & Londhe, D.S. Impact of COVID-19 on spatio-temporal variation of aerosols and air pollutants concentration over India derived from MODIS, OMI and AIRS. Spat. Inf. Res. 31, 637–651 (2023). DOI: [10.1007/s41324-023-00530-4](#)
- GES DISC datasets used in publication:** [OMTO3d_003](#), [OMNO2d_003](#), [OMDOAO3_003](#), [OMSO2e_003](#), [AIRS3STD_006](#).
- Applied Research Areas assigned to the Publication based on the content of its title and abstract:** **AIR QUALITY, PUBLIC HEALTH**
- As the result of this assignment, the datasets, referenced in the Publication can be directly linked to **AIR QUALITY, PUBLIC HEALTH** Applied Research Areas.
- This linkage helps users interested in these Applied Research Areas to find these datasets at the GES DISC Web interface.**

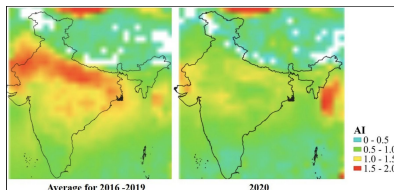
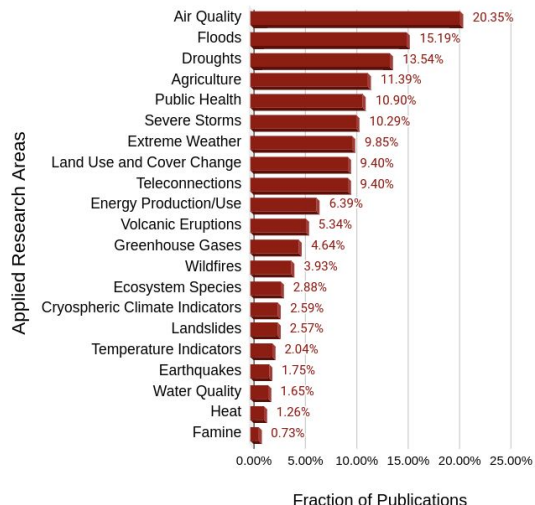


Figure from publication produced from the [OMTO3d_003](#) data: Variation of OMI Aura UV AI over India during 25 March to 3 May 2020 (lockdown period) and average of 2016–2019 for same period

Methodology

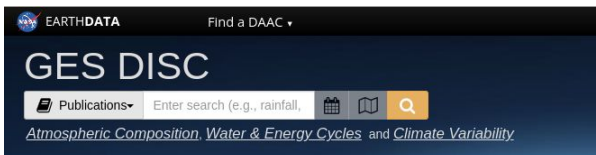
- Publications abstracts are collected from NASA [Astrophysics Data System](#) and from [Zotero](#) translation server.
- The Applied Research Areas are subset of Global Change Master Directory ([GCMD](#)) Keywords, a hierarchical set of controlled Earth Science vocabularies.
- A set of 10-30 search terms is defined for each applied research area.
- Publications titles and abstracts undergo Natural Language Processing (NLP) processing to clean and tokenize text.
- Based on the Term Frequency Inverse Document Frequency (TF-IDF) technique, TF-IDF vectors are generated for each publication, resulting in TF-IDF weights for each found search term.
- Each article is assigned to one or more Applied Research Area based on the thresholds for the search terms TF-IDF weight sums.
- Approximately one half of the collected publications are assigned to one or more Applied Research Area.

Applied Research Areas Distribution in Publications



GES DISC Publications Website

[GES DISC Website](#) with published works referencing datasets. Among facets on the left is “Applied Research Area” facet. On the right are the publications for selected applied research areas. Under each publication are the dataset names referenced in that publication.



Publications Showing 1 - 17 of 17 publications

Refine By

AIR QUALITY

Clear ...

Applied Research Area

- ☐ AGRICULTURE (9)
- ☒ AIR QUALITY (17)
- ☐ ECOSYSTEMS (4)
- ☐ EXTREME WEATHER (13)
- ☐ TELECONNECTIONS (16)

More...

Article Type

- ☐ article-journal (17)

Journal

- ☐ Atmosphere (1)
- ☐ Atmospheric Chemistry and Physics (2)
- ☐ Atmospheric Research (1)
- ☐ Earth and Space Science (1)
- ☐ Earth's Future (1)

More...

Year

- ☐ 2023 (17)

2023

Guion, Antoine, Turquet, Solène, Cholokian, Arineh, Polcher, Jan velocity, and surface ozone concentration during summer drought. *Physics*. Vol. 23, No. 2, pp. 1043-1071. DOI: 10.5194/acp-23-1044-

AIR QUALITY, EXTREME WEATHER, DROUGHTS, HEAT

Related Data Collections (1)

[OMHCHod_003](#)

Katpatal, Yashwant B., Patel, Vikas K., Londhe, Digambar S., 2023 concentration over India derived from MODIS, OMI and AIRS. Sp. 3294 Archive: PyZotero2023-08-03, AIR QUALITY, PUBLIC HEALTH

Related Data Collections (6)

[OMTO3d_003](#) [OMNO2d_003](#) [OMDOAO3_003](#) [OM](#)

Zoran, Maria A., Savastru, Roxana S., Savastru, Dan M., Tautan, I in Tokyo metropolis. *Environmental Research*. Vol. 228, pp. 11590

Related Data Collections (2)

[M2TMNXAER_5.12.4](#) [M2TMNXFLX_5.12.4](#)