

Dear presenters of the 2019 NOAA Workshop on AI for Earth Observations and NWP,

In response to the desire to publish peer-reviewed papers based on the presentations of the workshop we have arranged for an AMS Special Collection (SC) of papers related to the Workshop. You are all invited to submit your papers under the Workshop's SC banner.

Key points are:

- You must submit to one of these AMS journals: JTech, MWR, WAF, JAMC, BAMS, JAS, JPO, JHM, or WCAS. When submitting choose the Workshop SC "2019 NOAA Workshop on AI for Earth Observations and NWP".
- Initial submission must be by 31 December 2019.
- If you have a paper on the topic of your presentation that has already been submitted to or published in one of the above AMS journals, then we can add that paper to the SC. If you are interested in adding your paper to the Workshop collection, please send us the details about your paper and we will include it in the special collection

More information below. Any questions or concerns please contact us,

The SC organizers,

Ross Hoffman University <ross.n.hoffman@noaa.gov>

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## **The Workshop Special Collection (SC)**

### **The SC mechanism:**

Basically, any presenter can submit an article to any AMS journal (in a list of journals specified for the SC) and choose the "2019 NOAA Workshop on AI for Earth Observations and NWP" SC when submitting. Then the paper goes through normal peer review. The papers in the special collection have their normal place in the journals, but also are linked through the special collection web site. An example is [https://journals.ametsoc.org/topic/global\\_precipitation\\_measurement](https://journals.ametsoc.org/topic/global_precipitation_measurement) At the end of CY 2019 in our case we will close the special issue to further submission. When complete, AMS says "there can be an option to print a hard-copy version of all of the papers in a bound volume". More here:

- <https://www.ametsoc.org/index.cfm/ams/publications/special-collections>

### **Why a Special Collection (SC) for the Workshop**

An AMS SC is ideal because it collects papers from several different journals and the range of topics covered in the Workshop don't fit in any single journal. It is also easy for the conference organizers: all editorial and financial aspects are carried out by normal AMS procedures. The Science organizing Committee (SoC) has no special

responsibilities. However, the SoC plans to publish a Workshop overview paper that will also be included in the SC. AMS ensures the papers published will meet the highest standards.

### **Collection Title**

The 2019 NOAA Workshop on Leveraging AI in the Exploitation of Satellite Earth Observations and Numerical Weather Prediction

### **Short Title**

2019 NOAA Workshop on AI for Earth Observations and NWP

### **Collection Description**

This collection contains research presented at the 1st NOAA Workshop on Leveraging AI in the Exploitation of Satellite Earth Observations & Numerical Weather Prediction that was held April 23–25, 2019 in College Park, Maryland.

### **Reason For Collection**

The astonishing increase in accuracy and applicability of AI has been significant in the private sector, driven by the ease, efficiency, cost-effectiveness, speed and auto-learning features of AI. Significant advances have also been made in application of AI in different areas of meteorology and oceanography. However, until recently, far fewer AI applications were developed in the area of environmental data exploitation of satellite data, high-level information extraction in the area of Numerical Weather Prediction (NWP), data assimilation and forecasting, as well as for extreme weather prediction and nowcasting. There have been encouraging signs that AI is increasingly considered for these applications, with promising results—including predictive skills—and this trend is expected to continue with the ever-increasing volume of satellite data and the increased societal reliance on improved forecasting accuracy and resolutions. The increase of data volume comes from higher resolution satellites and sensors, from a growing list of new sensors (traditional as well as smallsats/cubesats), and from an explosion of new virtual observing systems made possible by the internet of things (IoT). AI has the potential to be a key resource for exploiting these data sources. This collection will serve to encourage collaboration and understanding across the different communities of researchers interested in "Leveraging AI in the Exploitation of Satellite Earth Observations and Numerical Weather Prediction".

### **Workshop update**

All the presentations are now online and roughly half of the posters. Posters can still be posted. Share yours with Narges Shahroudi <narges.shahroudi@noaa.gov>. Your presentation or poster, while not peer reviewed, can be cited. Here's an example of how to cite:

Boukabara, S.-A., V. Krasnopolsky, and J. Q. Stewart, 2019: Overview of NOAA AI activities in satellite observations and NWP: Status and perspectives. *1st NOAA Workshop on Leveraging AI in the Exploitation of Satellite Earth Observations & Numerical Weather Prediction*, College Park, Maryland, NOAA, available online at [https://www.star.nesdis.noaa.gov/star/documents/meetings/2019AI/Thursday/S1-2\\_NOAAai2019\\_Boukabara.pptx](https://www.star.nesdis.noaa.gov/star/documents/meetings/2019AI/Thursday/S1-2_NOAAai2019_Boukabara.pptx).

## **AMS website resources**

Everything about being an AMS author is here:

- <https://www.ametsoc.org/index.cfm/ams/publications/authors/journal-and-bams-authors/>

The subjects appropriate for each AMS journal are briefly described here:

- <https://www.ametsoc.org/ams/index.cfm/publications/authors/journal-and-bams-authors/choosing-a-journal-and-submission-type/>

If you are still unsure where to submit, ask us.

The SC are listed here (ours is not yet posted):

- <https://journals.ametsoc.org/page/collection>