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Noah Plymale Receives 2023 Larry D. Welch Award for Best External Publication

ALEXANDRIA, VA (November 2023) – Noah Plymale received the 2023 Larry D. Welch Award for Best External Publication for [“Statistical Cluster Analysis of Global Aerosol Optical Depth for Simplified Atmospheric Modeling.”](#) The article was published in the Journal of Applied Meteorology and Climatology, Vol. 61, No. 2 (February 2022): 109-128. Plymale is a research staff member in the System Evaluation Division (SED) at the Systems and Analyses Center, one of the three federally funded research and development centers operated by IDA.

IDA established the award in 2011 in honor of retired U.S. Air Force General Larry D. Welch, who was IDA’s president from 1990 to 2003 and again from 2006 to 2009.

Plymale’s fellow award recipients are co-authors Joshua Szekely, a research staff member in SED, and Anna Rubinstein, a former SED research staff member who is now the chief of responsible AI at the National Geospatial-Intelligence Agency.

“The authors’ article exemplifies General Welch’s high standards of analytic excellence and relevance,” said IDA President Norty Schwartz.

Atmospheric modeling is a method for measuring climate parameters and quantifying changes in atmospheric phenomena. One atmospheric modeling parameter is aerosol optical depth (AOD), which is critical to photon transmission, absorption, and scattering in the atmosphere. AOD has many applications for national security. The authors document research on the use of a data-clustering algorithm (k-means) to reduce large geographical datasets of AOD so that statistically similar clusters can be presented graphically and accessed through compact look-up tables. The work represents an innovative contribution that could facilitate analysis where approximate or typical aerosol conditions are provided in the form of simple look-up tables.

“It is an honor that our work characterizing global atmospheric phenomena was selected among other excellent papers for the Larry D. Welch Award for Best External Publication at IDA,” said Plymale. “I am grateful to the selection committee for their time evaluating eligible publications and to my colleagues and division leadership for their support.”

Plymale earned his bachelor’s degree in chemistry from Kent State University in 2011 and his doctoral degree in chemistry from the California Institute of Technology in 2017. He is a member of the American Institute of Aeronautics and Astronautics.

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