

Metadata Records
Irrigation Innovation Consortium-Supported Project Datasets

Please use a separate sheet for each dataset. Answers are automatically saved.
 Questions? Contact Diane DeJong: diane.de_jong@colostate.edu.

Thank you!

Question	Answer
Project name	UNL Base Funding
Project background	Evapotranspiration (ET) is a critical parameter that is commonly used to assess plant water stress, measure crop water use, support irrigation management decisions, monitor drought, and calculate water balance and productivity. This project, active since IIC's launch in 2018, has established and augmented the "Parallel 41" network of latest-generation, smart eddy covariance flux stations across the Central Plains of the U.S. The team is working to interrelate in-field, real-time actual evapotranspiration measurements with satellite-based spatial data to provide constantly updated and accurate information on ET that will be made accessible to agricultural crop managers in the network's participating states through an online platform. In Kansas, the team is currently evaluating the feasibility of using existing flux gap-filling protocols to provide real-time estimates of ET when atmospheric conditions are not suitable for eddy covariance measurement.
Dataset name	Parallel 41 Flux Network Evapotranspiration Data: parallel41.nebraska.edu
Primary author Include first & last name, institution affiliation, and email address.	Christopher Neale, Director of Research, Daugherty Water for Food Global Institute, University of Nebraska, cneale@nebraska.edu
Primary contact The primary contact may be the same or different from the primary author. Include first & last name, institution affiliation, and email address.	Christopher Neale, cneale@nebraska.edu
Dataset description Please provide a brief, clear summary description of the dataset contents. Indicate as applicable: purpose and scope; time period; areas of investigation; and any other special characteristics.	The Parallel 41 website provides quality controlled, gap filled, and continuous measured ET, in inches or millimeters per day. We also provide daily reference ET (ET _r), daily crop coefficient (K _c) and cumulative measured ET during the growing season. Additional information measured and recorded by the flux towers is available upon request and is useful to track climate variability and change over time, to support benchmarks, planning, goal-setting and policy. The updated equipment acquired for this network, and the resulting real-time gap filled data sets, can also more quickly and accurately model climate change scenarios and the effects on crop yield and water availability.
Spatial coverage Please be specific as possible about the geographic coverage of your data, and record the information according to defined standards, such as FGDC or the Getty Thesaurus of Geographic Names. You can enter lat/long data, county names, state names, etc.	Tower Locations: Ames, IA; Mead, NE; Holbrook, NE; Grant, NE (2 towers); Sutherland, NE
Temporal coverage Describe the temporal coverage of your dataset: Start: Time of day, Date, Month, Year Finish: Time of day, Date, Month Year	Parallel 41 ongoing since 2016, but different towers came online at different years and dates.
Re-use limitations Describe known problems or caveats that would limit reuse of the data (e.g., uncertainty, sampling problems, blanks, quality control samples) and/or that future potential users of your dataset should know about. Or indicate "None."	None
Citations Please include full citations and DOIs for articles published based on or related to this dataset. Or indicate "None."	Robert B. Daugherty Water for Food Global Institute. 2023. Parallel 41 Flux Network. University of Nebraska. Lincoln, NE, USA. < parallel41.nebraska.edu >.
Keywords Please add a few appropriate National Agricultural Library keywords: https://agclass.nal.usda.gov/vocabularies/nalt	evapotranspiration; eddy covariance; energy balance, irrigation scheduling; Nebraska; remote sensing; Iowa; soybeans; turtle beans; corn, shortgrass prairie
Tags Please add a few of your own user-defined tags that would be useful to others who might use your dataset in the future.	energy balance flux towers
Acronyms & abbreviations Please define any acronyms, site abbreviations, or other project specific designations used in your dataset. Or indicate "none."	ET - evapotranspiration; ET _r -Reference Evapotranspiration (alfalfa reference crop); ET _c - Crop Evapotranspiration; GDD - growing degree days; VPD - vapor pressure deficit
Other dataset storage location Has this dataset already been uploaded elsewhere? Yes or No Reasons may include a requirement as part of publishing a paper or storing data on GitHub or other locations to make accessible to others. If yes, please provide the link or other information to explain where the dataset is located and where or how it can be accessed.	Data available through the Parallel41.nebraska.edu