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	Remote sensing: Spatial Irrigation Decision Support System (SIDSS) using multi-scale data: UAS, micro-satellites & ground-based data
Project background	Reduced water supply due to drought, urban growth, and industry demand has increased the need for efficient water management. Satellite and unmanned aircraft systems (UAS) platforms equipped with advanced multispectral sensors offer very high spatial and temporal resolution that can be used to support farmers in making effective irrigation management decisions. Researchers tested the accuracy of UAS combined with satellite images to determine actual water needs or evapotranspiration (ET) and soil water deficit, for both full and deficit irrigation management. Accomplishments: a) a total of seven (7) UAS missions were performed, multispectral imagery were pre-processed and calibrated.; b) ground-based radiometry and soil water content were collected; c) field and weather data were processed to estimate corn water used at the USDA ARS Limited Irrigation Research Farm (LIRF); and d) actual crop water use algorithm was coded using MATLAB. A large difference on corn water use was determined for the full and limited irrigated treatments; with better model performance for larger corn water use rates.
Dataset name	USDA LIRF Data
Primary author Include first & last name, institution affiliation, and email address.	José Chávez, Colorado State University, jose.chavez@colostate.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.	José Chávez, Colorado State University, jose.chavez@colostate.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 following data were generated and stored on PCs at CSU: corn phenology, UAS multispectral images (thermal and reflectance), net radiation, soil heat flux, sensible heat flux, latent heat flux, soil water content, MATLAB code, weather data, ancillary data.
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.	USDA Limited Irrigation Research Farm near Greeley, CO at an elevation of 1,425 m above mean sea level (amsl), latitude 40.4463˚ North and longitude 104.6371˚ West.
Temporal coverage Describe the temporal coverage of your dataset: Start: Time of day, Date, Month, Year Finish: Time of day, Date, Month Year	July - December 2018

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."	
Citations Please include full citations and DOIs for articles published based on or related to this dataset. Or indicate "None."	
Keywords Please add a few appropriate National Agricultural Library keywords: https://agclass.nal.usda.gov/vocabularies/nalt	unmanned aircraft systems; remote sensing; soil water content; decision support systems; multispectral imagery; corn; irrigation
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.	unmanned aircraft systems; remote sensing; soil water content; decision support systems; multispectral imagery; corn; irrigation
Acronyms & abbreviations Please define any acronyms, site abbreviations, or other project specific designations used in your dataset. Or indicate "none."	SIDSS - Spatial Irrigation Decision Support System
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.	