Eddy Covariance Data Analysis for Grant, NE

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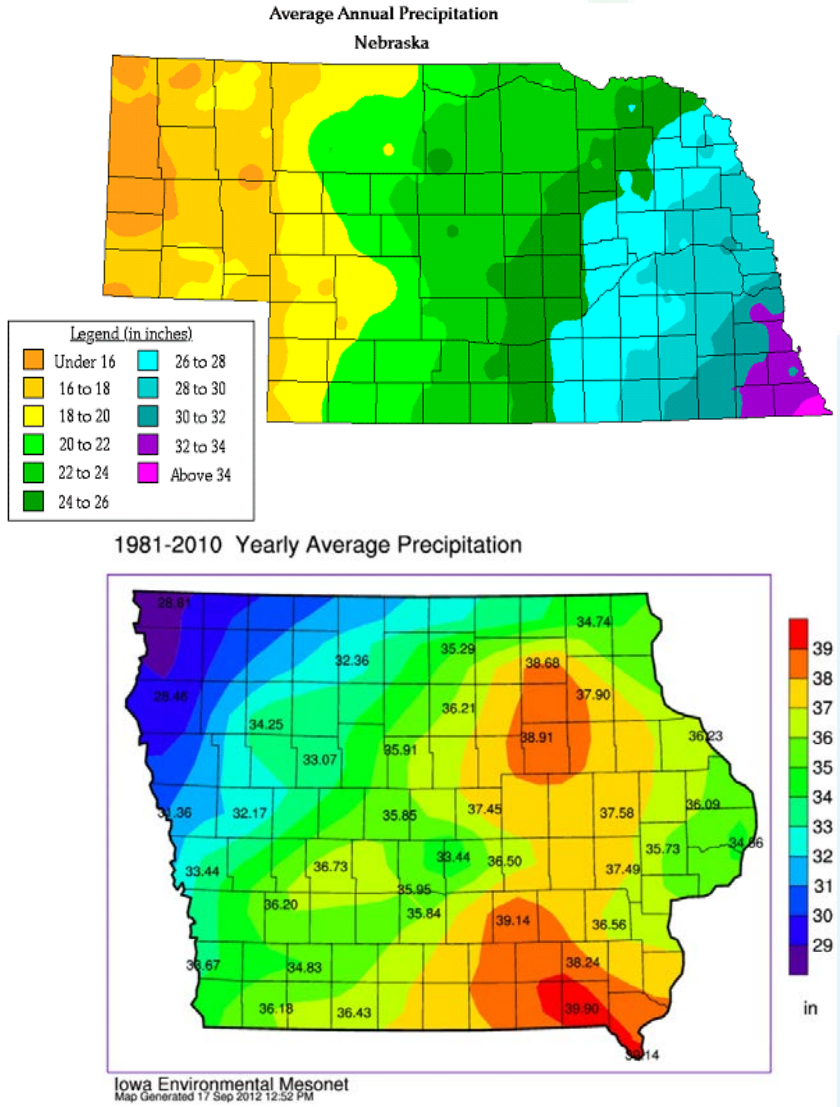
University of Nebraska

Water for Food
DAUGHERTY GLOBAL INSTITUTE
at the University of Nebraska

Parallel 41 Flux Network Vision:

- A network of eddy covariance flux towers in the gradient of precipitation from western Nebraska to eastern Iowa, measuring **evapotranspiration** in real time and serving **corrected and quality controlled** values in **real-time**.
- Data will be served to stakeholders (water managers, natural resources districts, farmer and farmer groups, researchers) via free Parallel 41 website and app.
- Partly funded through a generous donation of software, goods and services by LiCOR, matched by a grant from FFAR through the **Irrigation Innovation Consortium.**



Nebraska and Iowa Precipitation Gradient

Irrigation Innovation Consortium

- A Consortium of Higher Education, Industry, and NGOs
  - Colorado State; Fresno State; Kansas State; Nebraska; Texas A&M
  - Focusing on technology development and filling research gaps through demonstration and training in a pre-competitive space
- Major Research Themes
  - Water and Energy Efficiency
  - Remote Sensing and Big Data Applications for Improving Irrigation Water Management
  - System Integration and Management
  - Irrigation Technology Acceleration
- Initial Budget of $10M ($5M investment from FFAR matched with private support)

Mission & Vision of the Irrigation Innovation Consortium

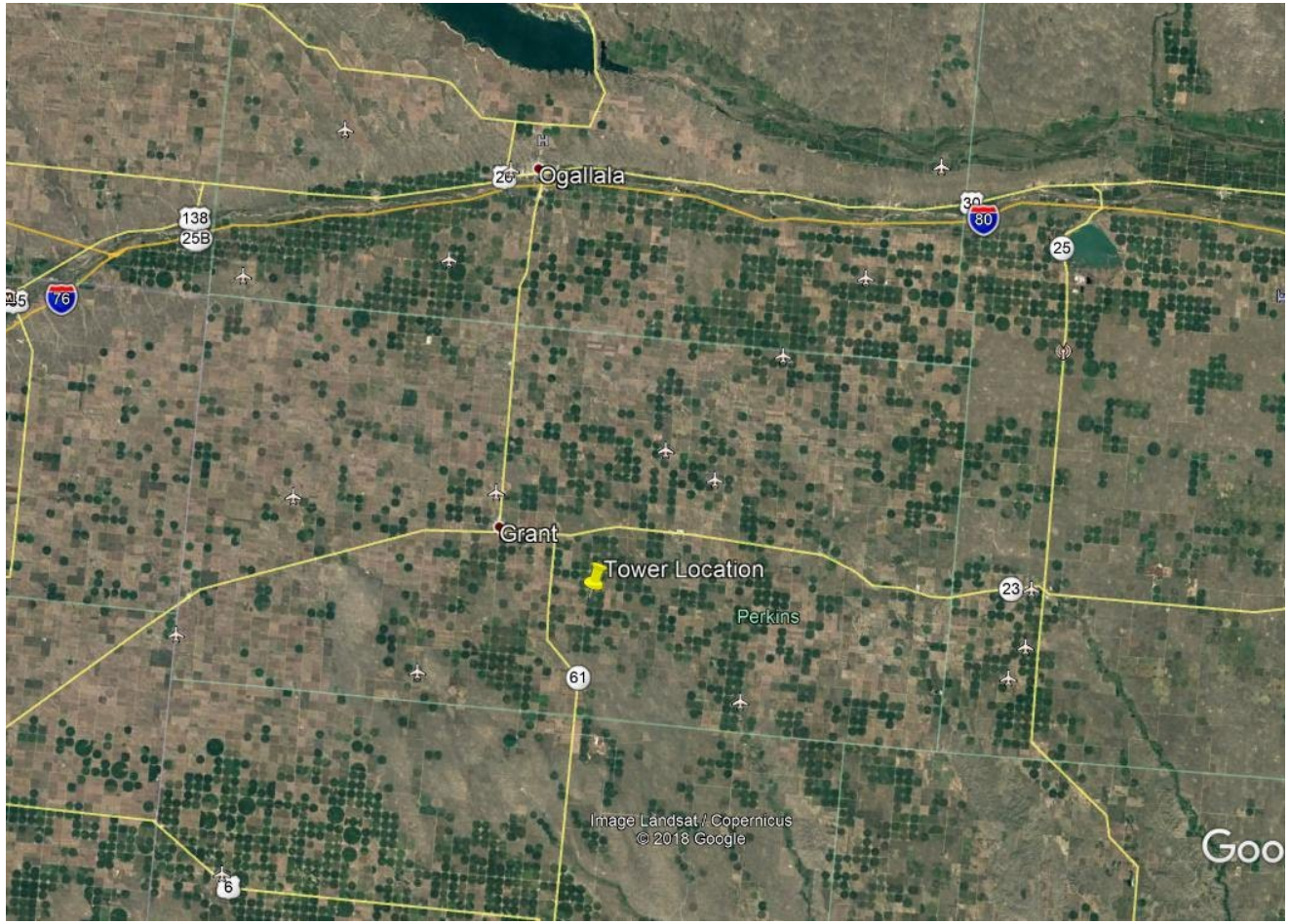
IIC will accelerate the development and adoption of novel water and energy efficient irrigation technologies and practices through public-private partnerships. IIC will expand to include more universities and public sector researchers to create an internationally recognized, neural network center of excellence that promotes and enhances water and energy efficiency in irrigation, ultimately creating greater resiliency in our food and irrigated landscape systems.

Geographic depth and breadth, covering landscape and agriculture.

The consortium will be based at Colorado State's Irrigation Technology Center, a 50 acre site in Fort Collins, but research demonstration sites will be located in many regions.

Colorado State University · Fresno State Discovery. Diversity. Distinction. · K-State Research and Extension · Water for Food Daugherty Global Institute at the University of Nebraska · Texas A&M AgriLife

Grant, NE Eddy Covariance Tower (Grant NE 01)



Installed July 2018

Instruments Posted At: 2019-05-17 14:30:00

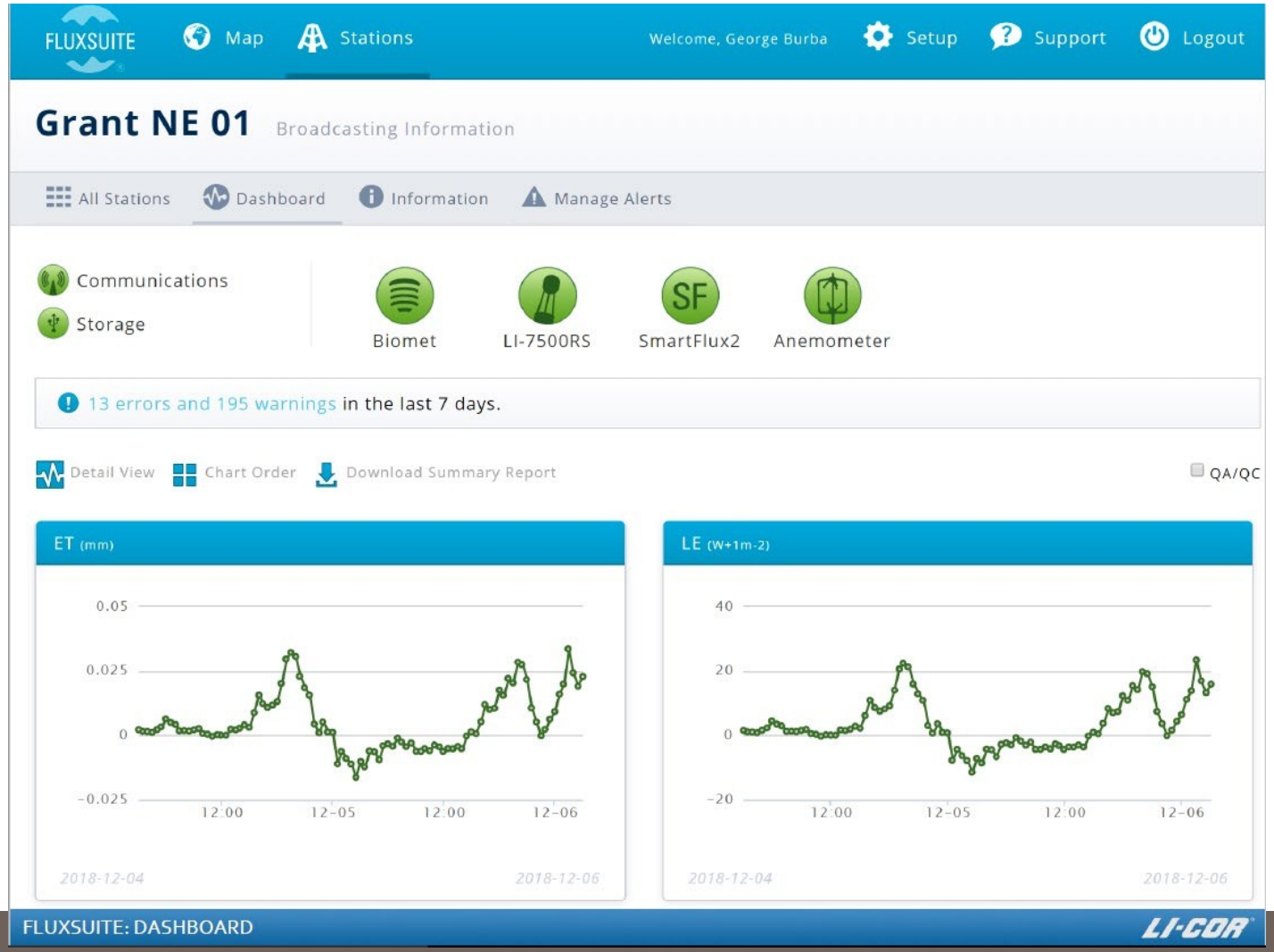
Company	Model	Serial Number	Software Version
LI-COR	LI-7550	smart3-00184	8.8.15
LI-COR	LI-7500A	75D-4088	8.8.15
gill	wmpro	Y122708	2329-114-01
Sutron	9210B	1106494	3.22.0.19
LI-COR	SMARTFlux2	smart3-00184	2.2.16

UPPER REPUBLICAN NRD

NEBRASKA WATER BALANCE ALLIANCE

Grant, NE Eddy Covariance Tower (Grant NE 01)

FluxSuite Dashboard View for Grant, NE

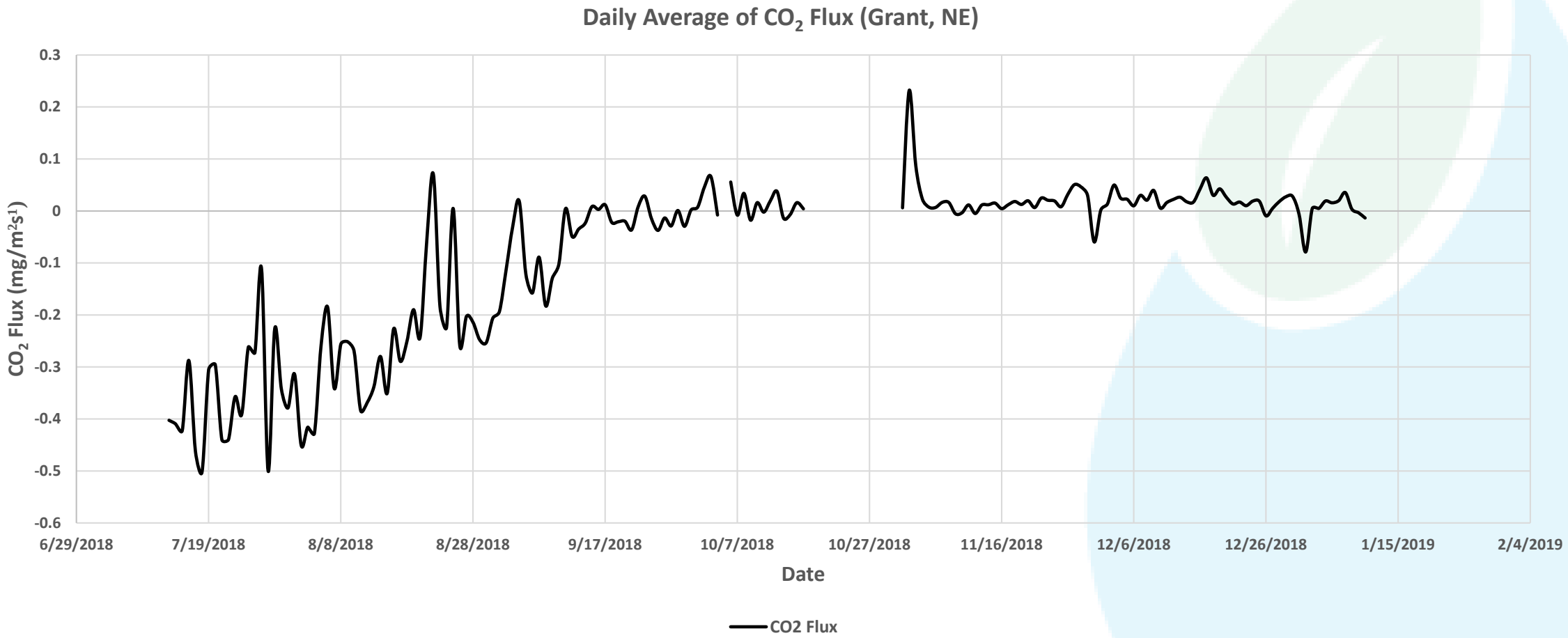


Data for over 100 meteorological and climatological variables are available through the LiCOR proprietary software FluxSuite, including:

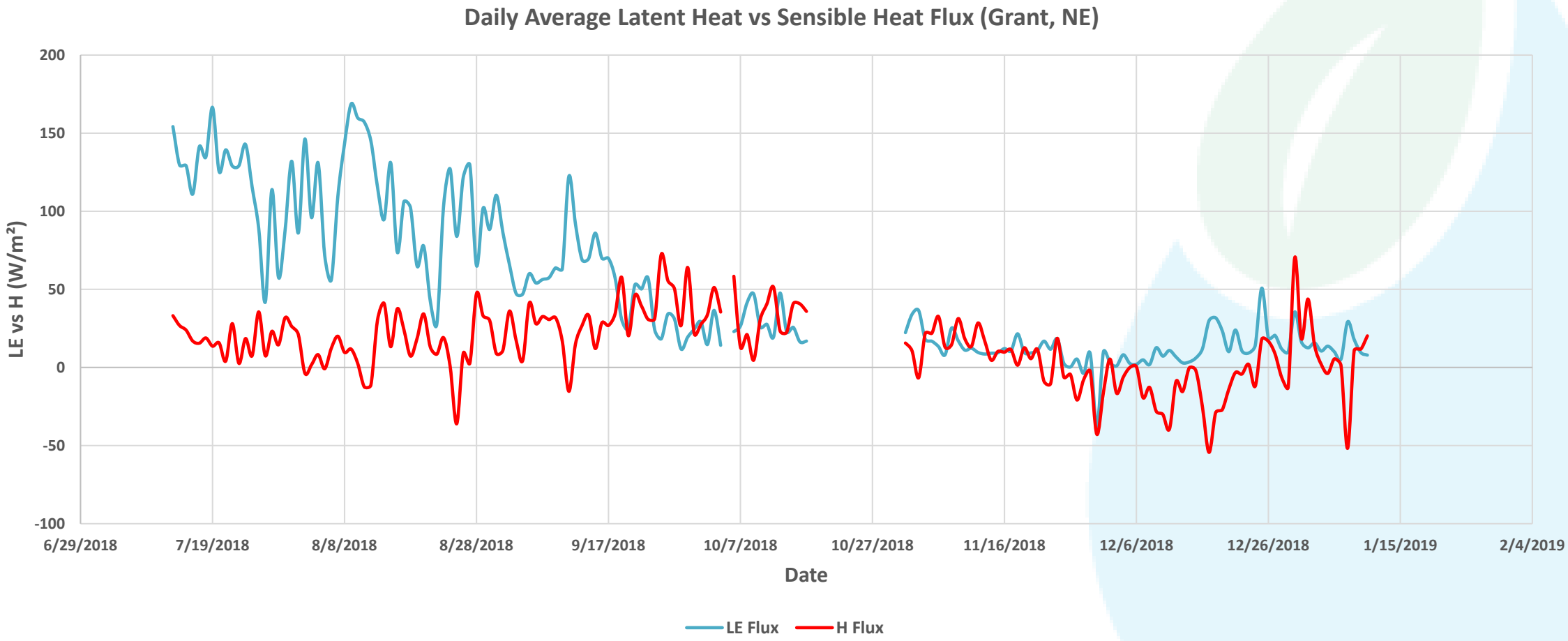
- **carbon dioxide flux, soil heat flux, sensible heat flux, net radiation, air temperature, precipitation and others**
- This information is available upon request to DWFI.

SmartFlux requires a subscription (license). To provide free ET data to stakeholders, DWFI and LiCOR developed the Parallel 41 website.

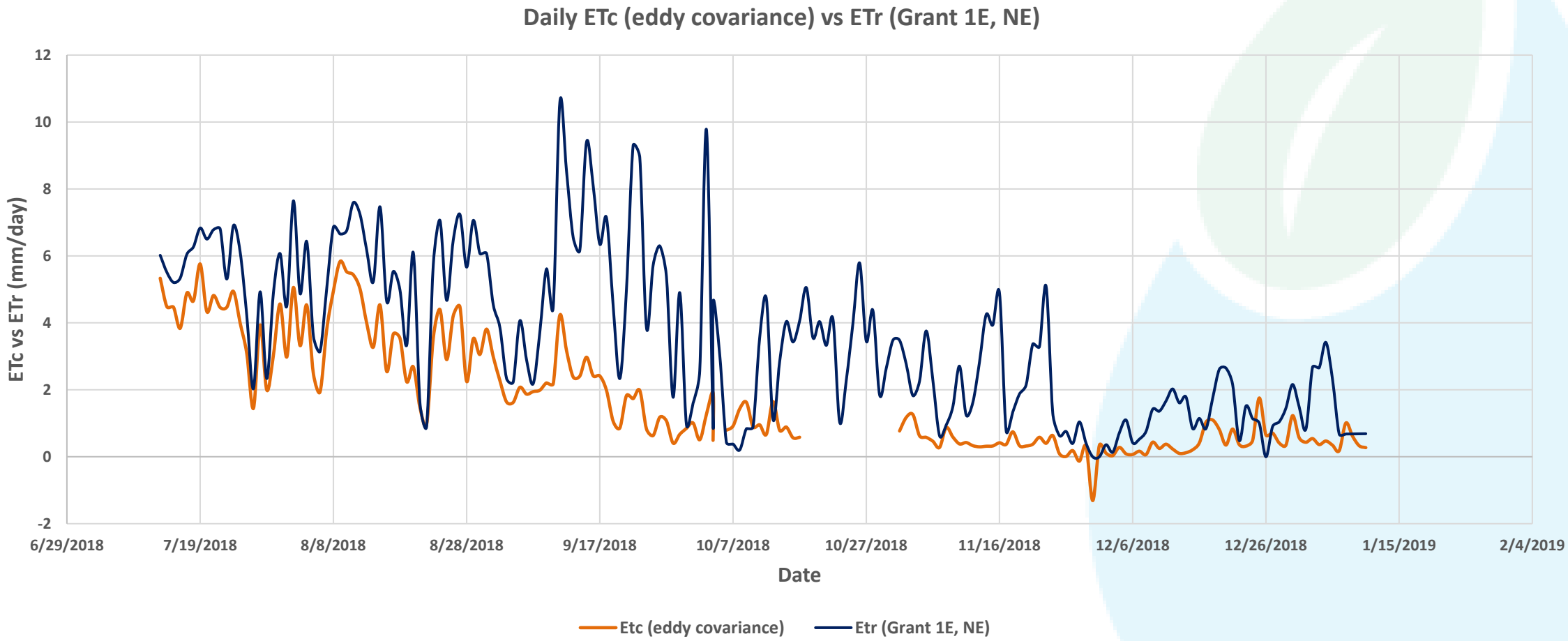
Graph of CO_2 Flux



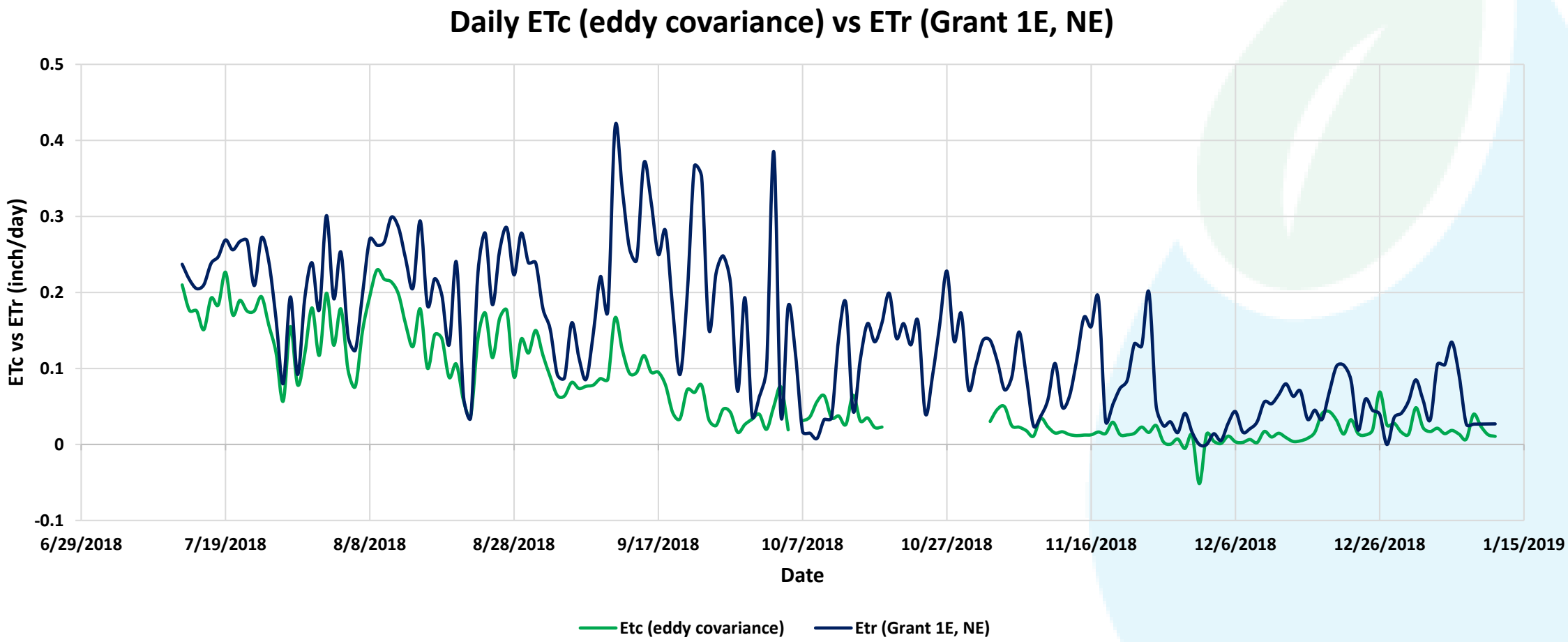
Graph of Latent Heat & Sensible Heat Flux



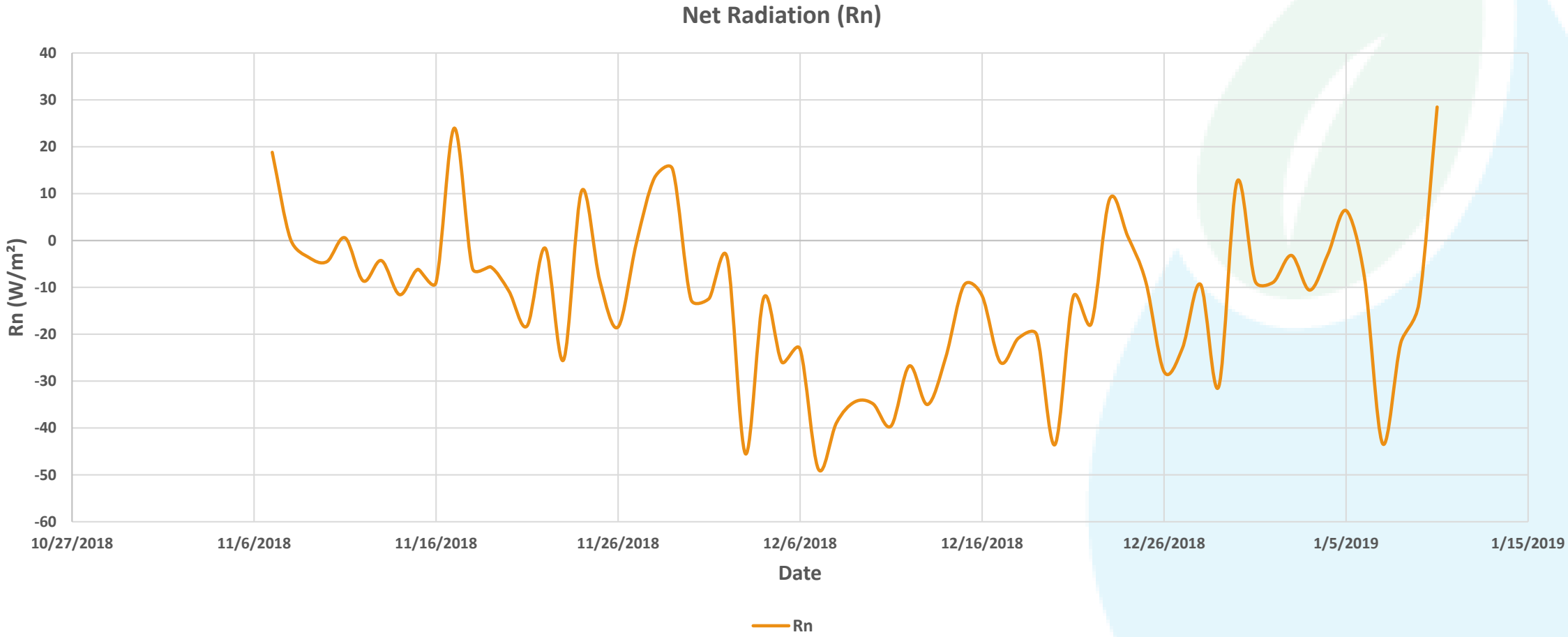
Graph of ETc and ETr (mm/day)



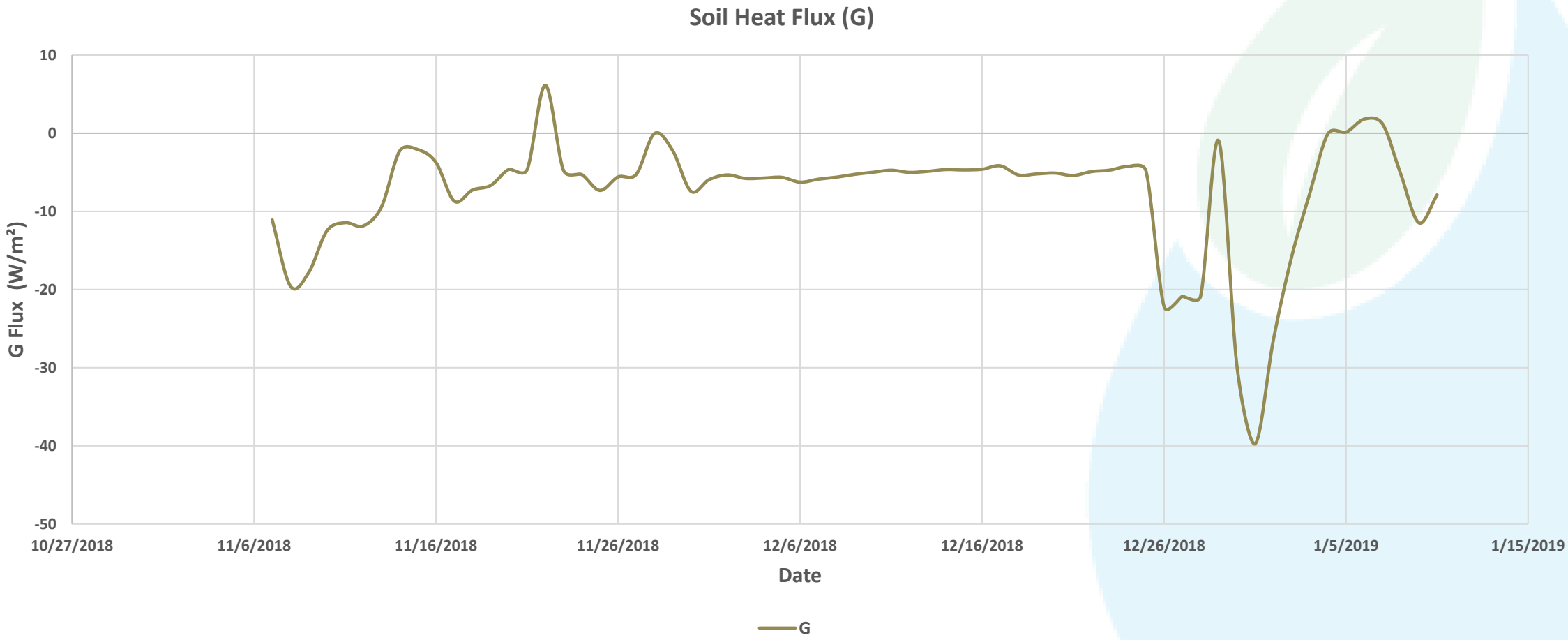
Graph of ETc and ETr (inches/day)



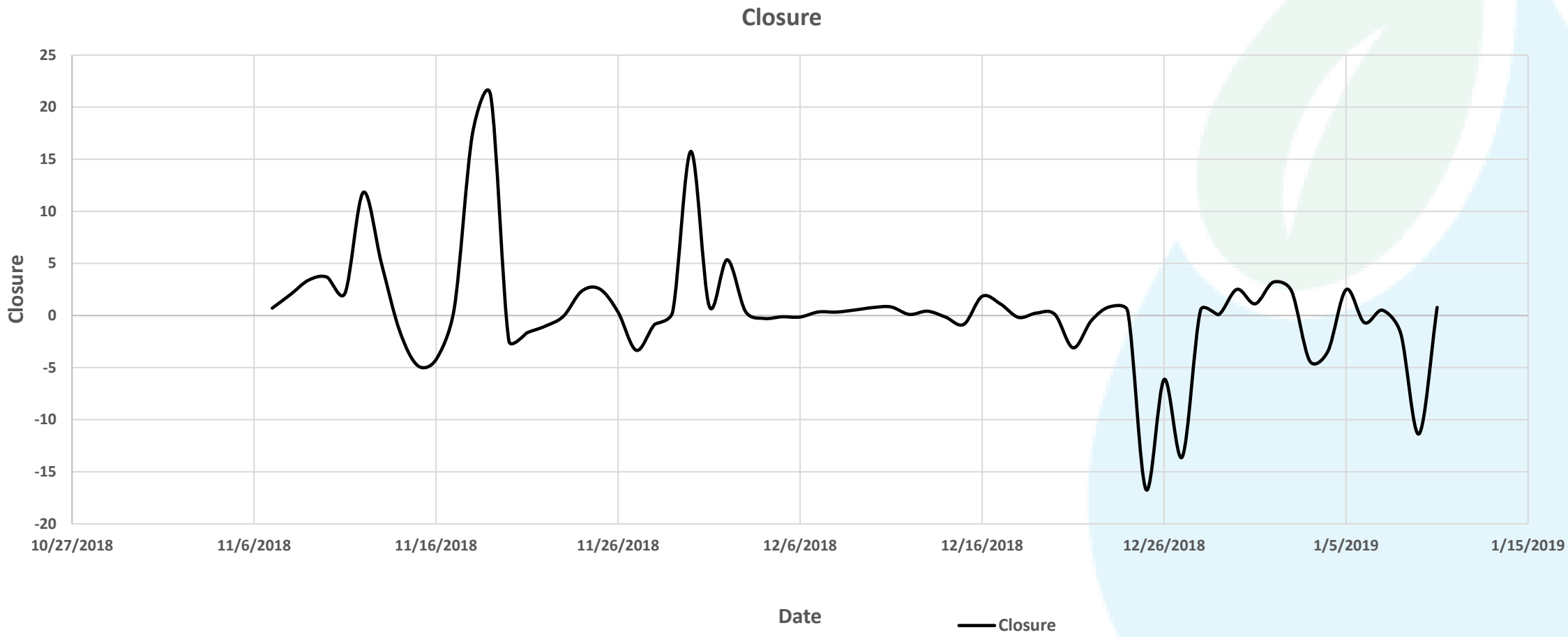
Graph of Net Radiation



Graph of Soil Heat Flux



Graph of Closure



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