Eddy-covariance and chamber measured greenhouse gas emissions from a commercial corn field

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Introduction

- The general goal of the project is to:
  Develop an online tool to schedule irrigation and fertilization to optimize yields and mitigate N\textsubscript{2}O emissions
- Only recently has a high-frequency N\textsubscript{2}O sensor (10 Hz) become available that makes it possible to use Eddy Covariance technique.
Eddy Covariance: Emissions of Greenhouse Gases

$N_2O$ (0.3-3,000 ppb), CO, H$_2$O

QCL-TILDAS-76 Ambient Air Monitor
$N_2O-N$ flux affected by rainfall and fertilization
Summary

- Field-scale N$_2$O flux measurements using EC are reasonable compared with chamber measurements.
- N$_2$O-N emission from corn field:
  29 g/ha/day (3.5 kg/ha/120 days)