

Earth Networks' Atmospheric GreenHouse Gas (GHG) Observations for Research and Modeling at Multiple Scales

E. Novakovskaia, C. Sloop and D. Bixler

Earth Networks, Inc., 12410 Milestone Center Drive, Germantown, MD 20876; 301-250-4000, E-mail: enovakovskaia@earthnetworks.com

Earth Networks (EN) is deploying 100 cavity ring-down spectrometers, which will continuously measure CO_2 and CH_4 . Currently, more than 20 instruments have been deployed in the U.S., with year-long records from most of the sites. In addition to regional scale observations at tall towers, Earth Networks is also deploying GHG instruments at buildings in urban areas to support needs of scientists in understanding complex dynamics of emissions and sinks in cities. A site in metropolitan Washington, DC area has been online for two years and in addition to sampling GHG's in ambient air, measurements are also taken in sewage vents at the roof of the building. EN also collects surface weather information as well as measurements from lightning system (ENTLN) and boundary layer thermodynamic profilers (ENBLN). These data are used in Earth Networks' GHG monitoring system where various levels of pre-processing include application of data quality and meteorological filters. EN observations are available in real-time from a cloud-based file system.

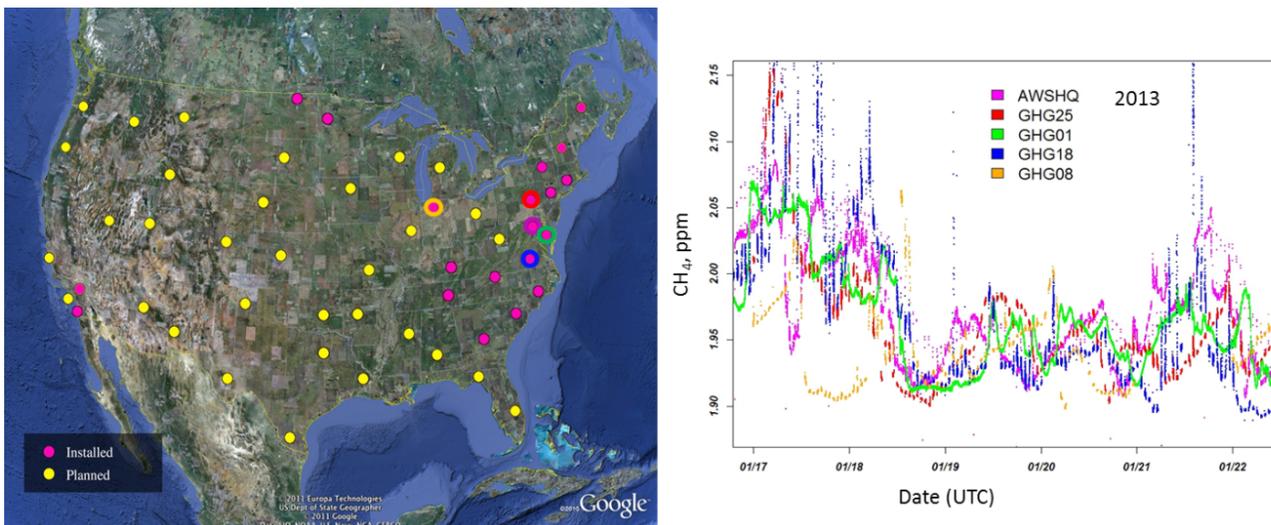


Figure 1. Earth Networks' atmospheric GHG observations. Left panel: Map of EN sites in the U.S. Right panel: CH_4 measurements at sites in MD, VA, PA and IN in January 2013.