Episodic and Mesoscale Contributions to Surface Fluxes over a Large Reservoir in Mississippi

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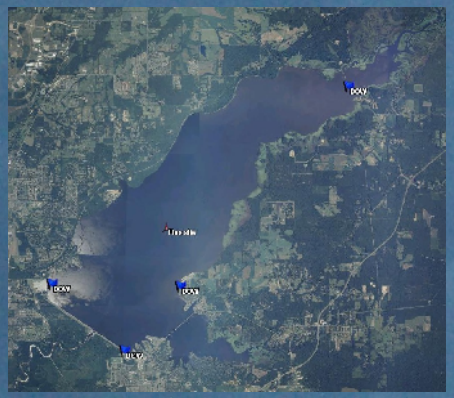
Background

- **Flux tower installed initially to study flux relationships on a large ice-free reservoir (5 km x 15 km)**
- **In cool season, sensible heat flux nearly tripled on cold front days; and latent heat flux increased sevenfold**
- **Interannual differences in fluxes were driven more by number of cold front passages than by temperature**

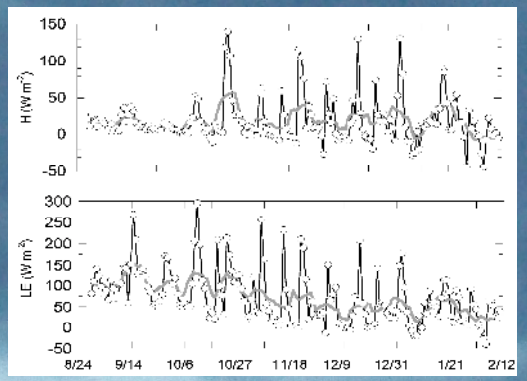
CM3 Development

- Comprehensive flux measurement station in middle of reservoir since 2007
- Doppler-on-Wheels from CSWR in March 2011
- Mobile vehicle-mounted temperature/humidity measurements
- "Portable" basic surface weather station on west shore
- Water quality probe from MS Dept. of Environmental Quality

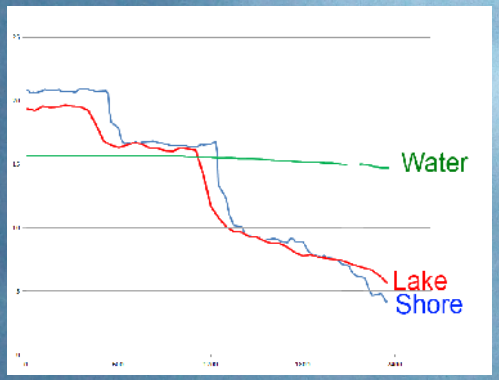


Cold Front Cases

August 2007-February 2008:



10 December 2012:



- Liu et al., 2009: Eddy covariance measurements of surface energy budget and evaporation in a cool season over southern open water in Mississippi. *J. Geophys. Res.*, **114**, D04110
- Liu et al., 2011: Variability in cold front activities modulating cool-season evaporation from a southern inland water in the USA. *Envir. Res. Lett.*, **6**, 024022

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