

Deployments of the ET Probe during the 2004 Hurricane Season

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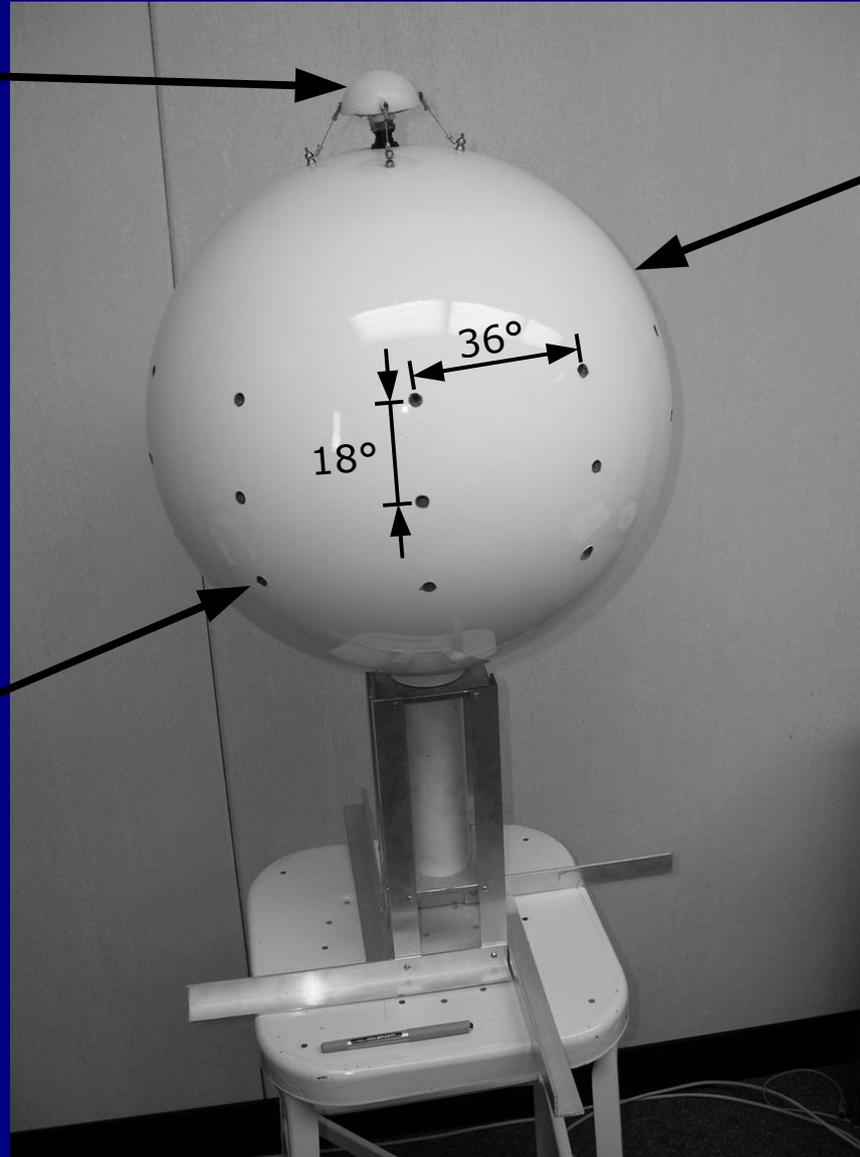
"Big Hole" Probe Exterior Design

Temperature sensors

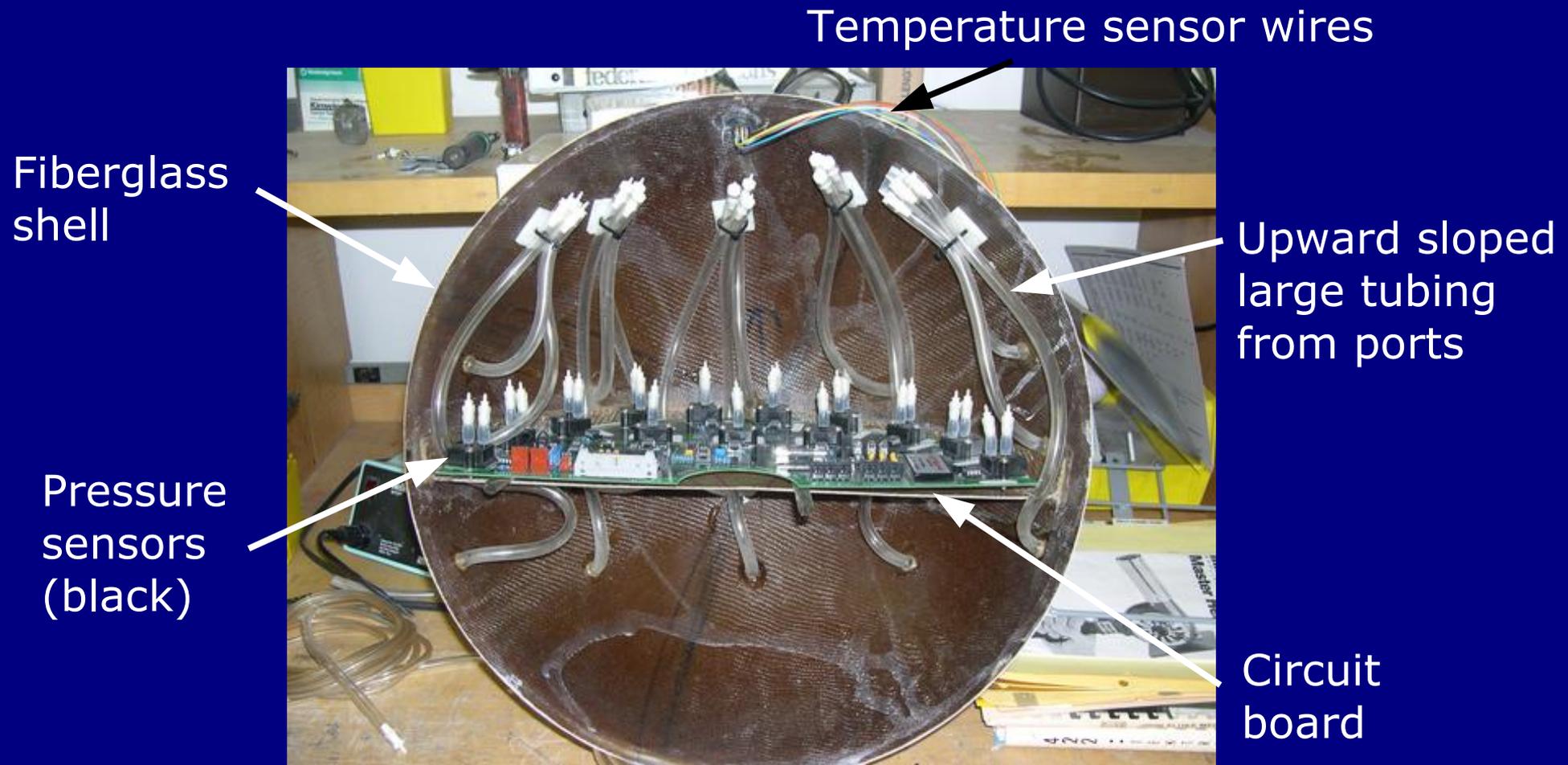
43 cm fiberglass shell

6.4 mm pressure ports

Original and backflushed probes use 1 mm ports like BAT probe

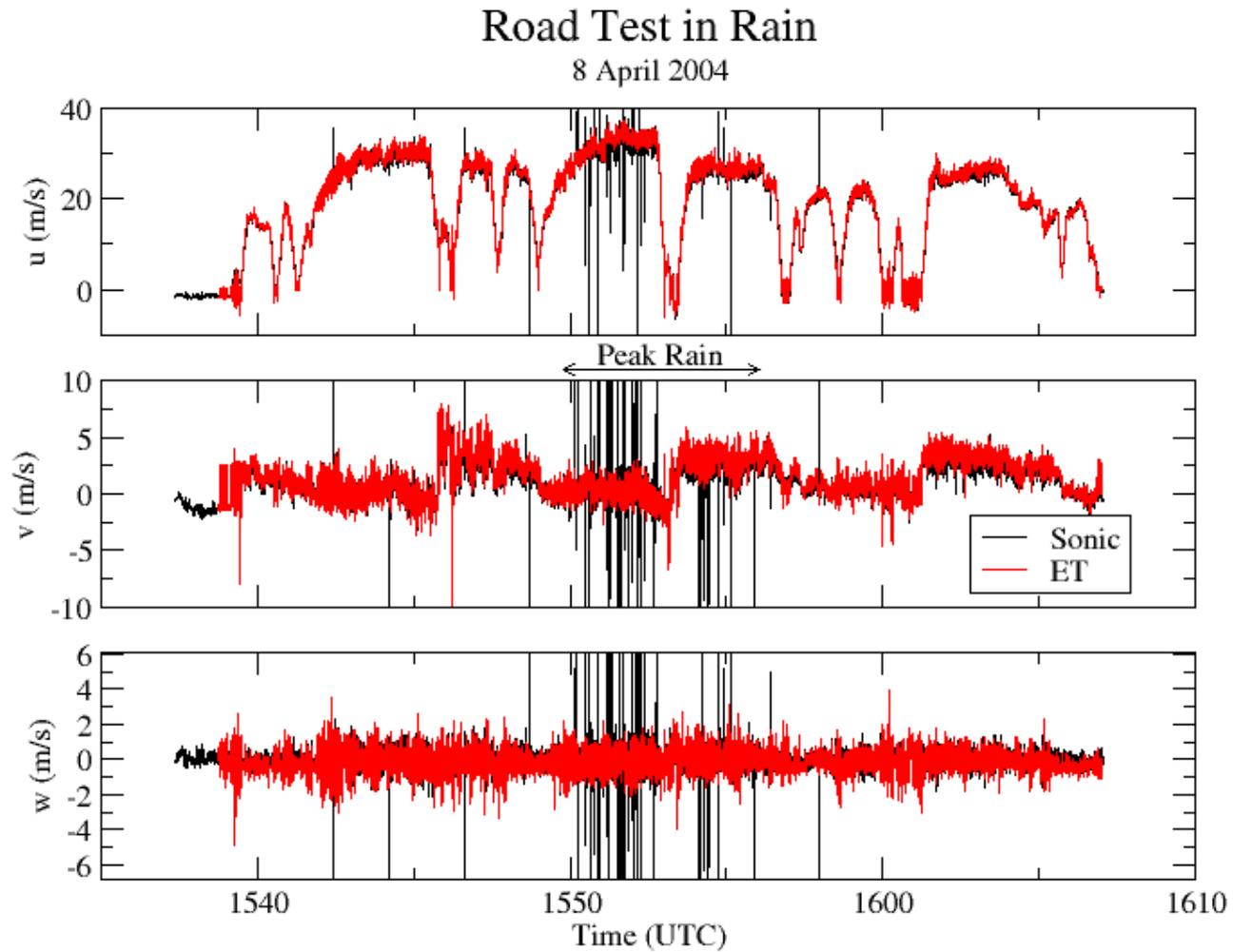


Internal Design



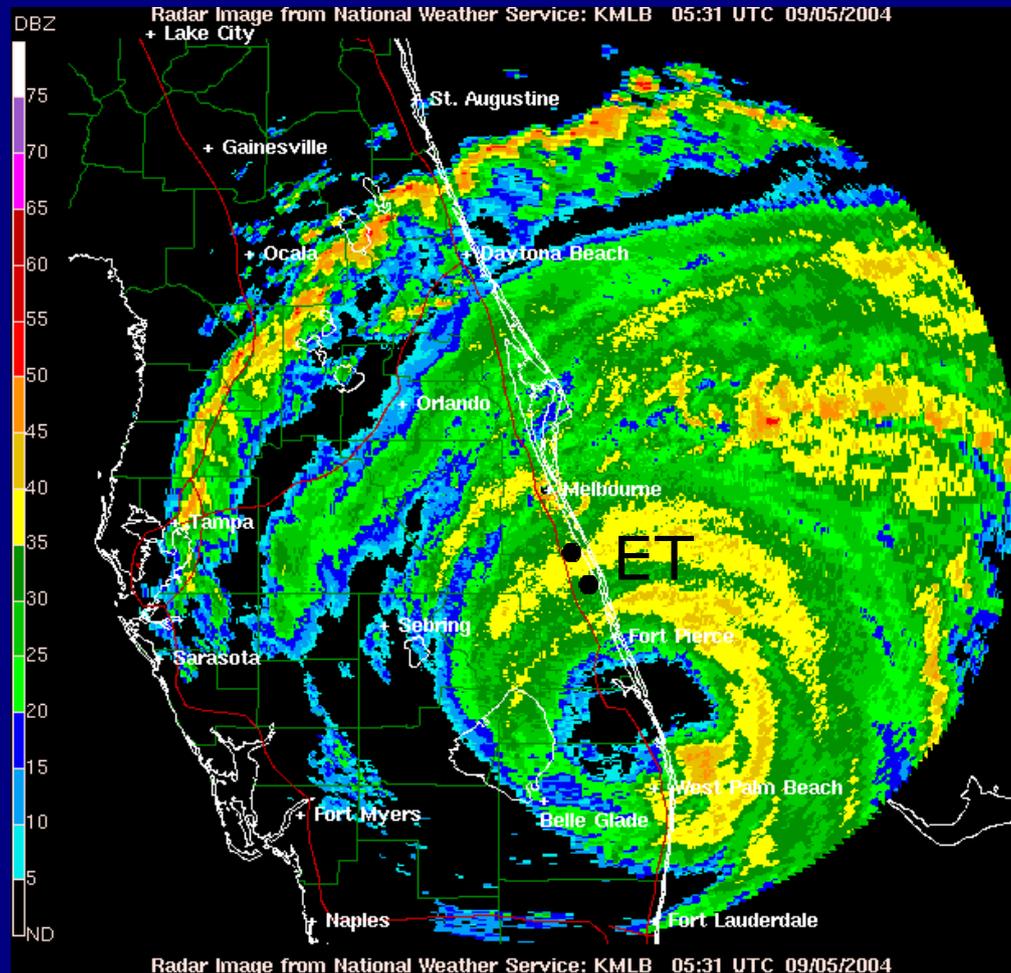
Missing in photo: smaller tubing to sensors and A/D card positioned below circuit board

Sonic-ET Comparison



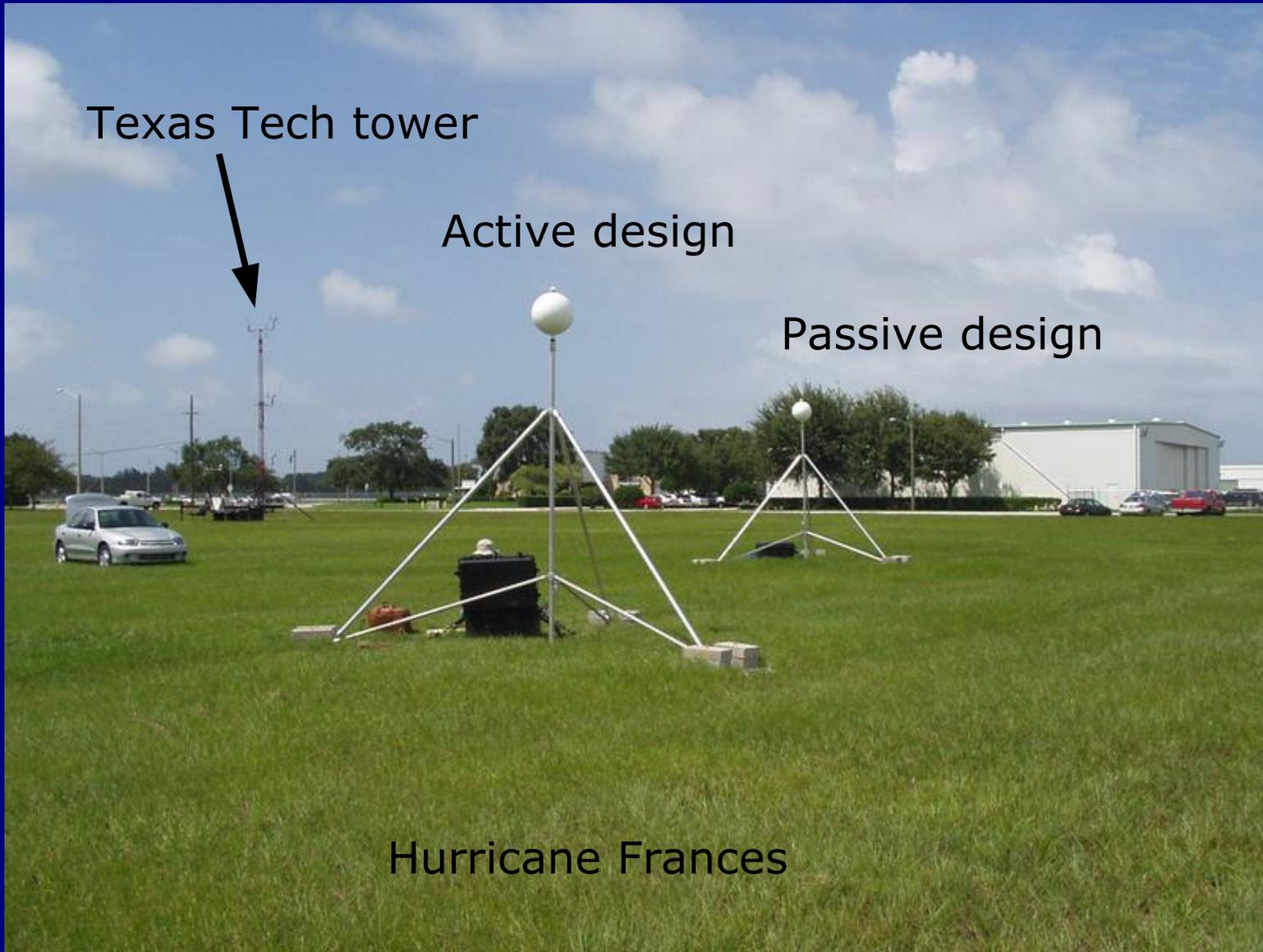
Hurricane Frances, Sept 2004

Probes on
right side
of storm with
onshore winds



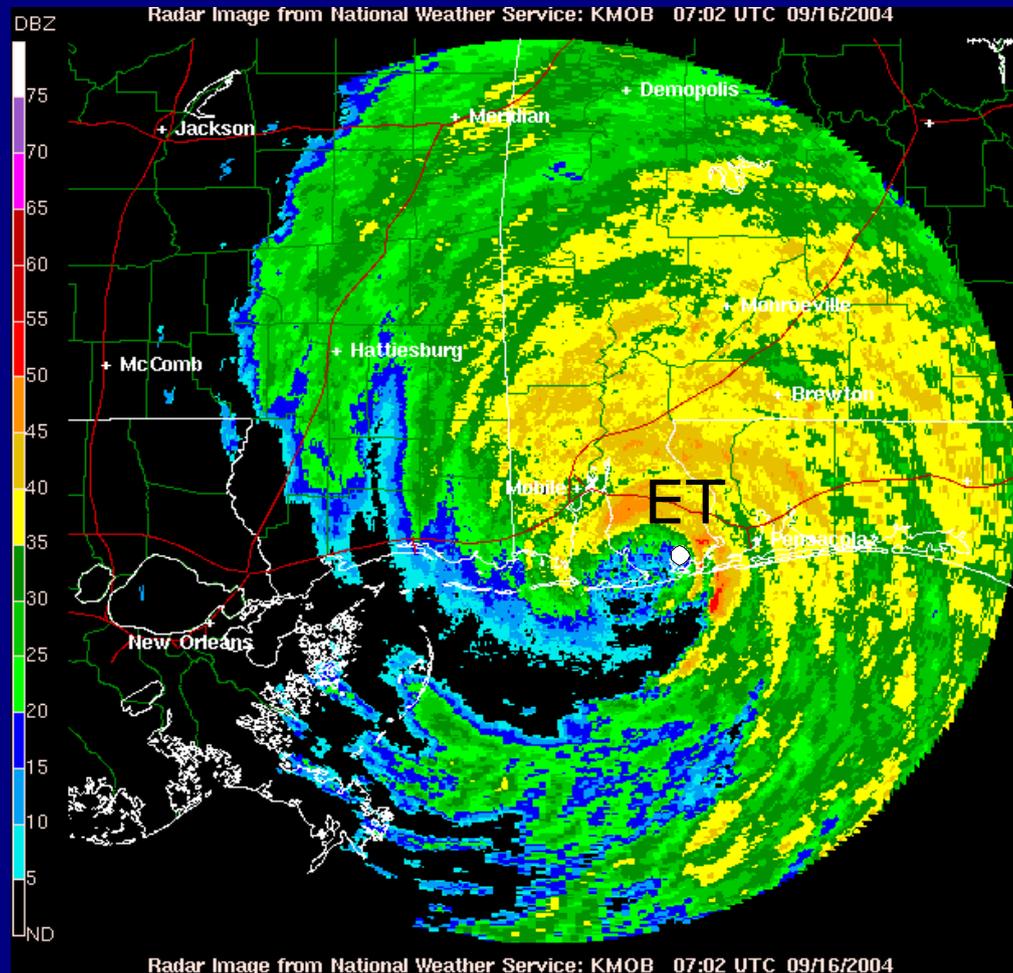
3 probes at
two locations:
2 passive and 1
active

Vero Beach Towers



Hurricane Ivan, Sept 2004

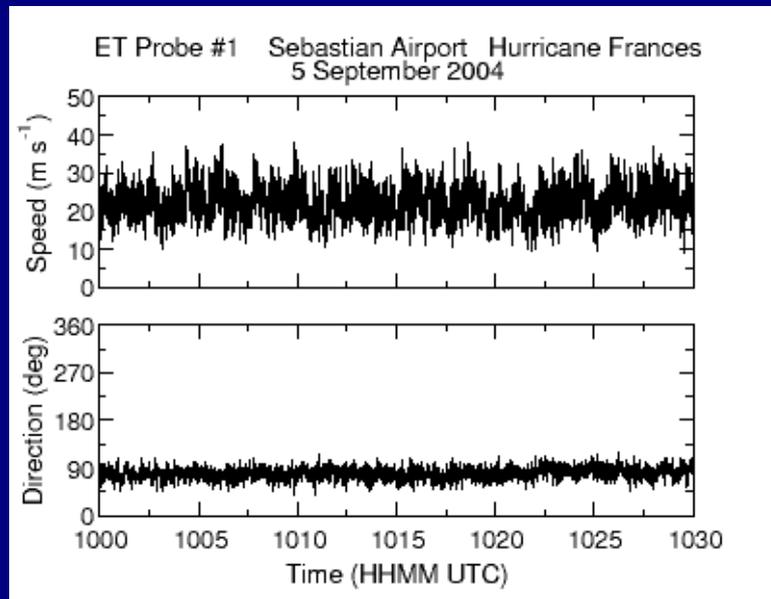
Probes on eastern edge of Ivan's eye



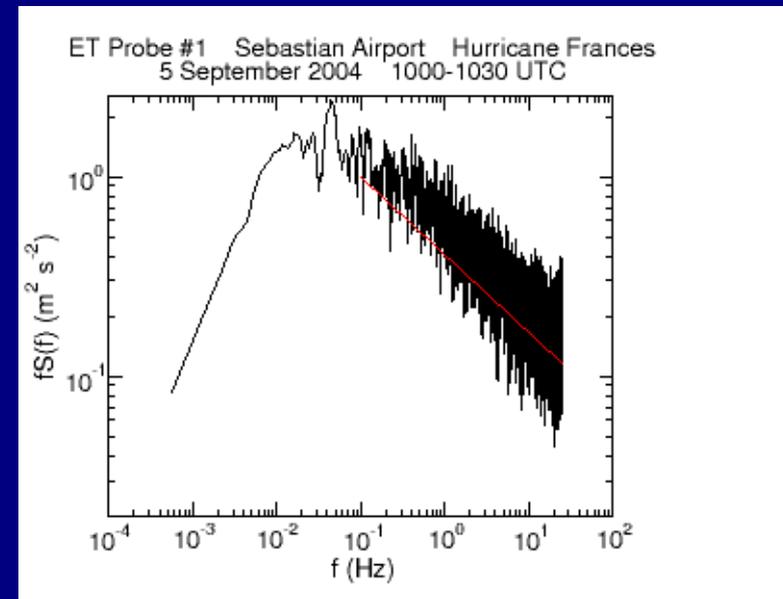
One location with 1 passive and 1 active probe

Frances Example Data

Passive System

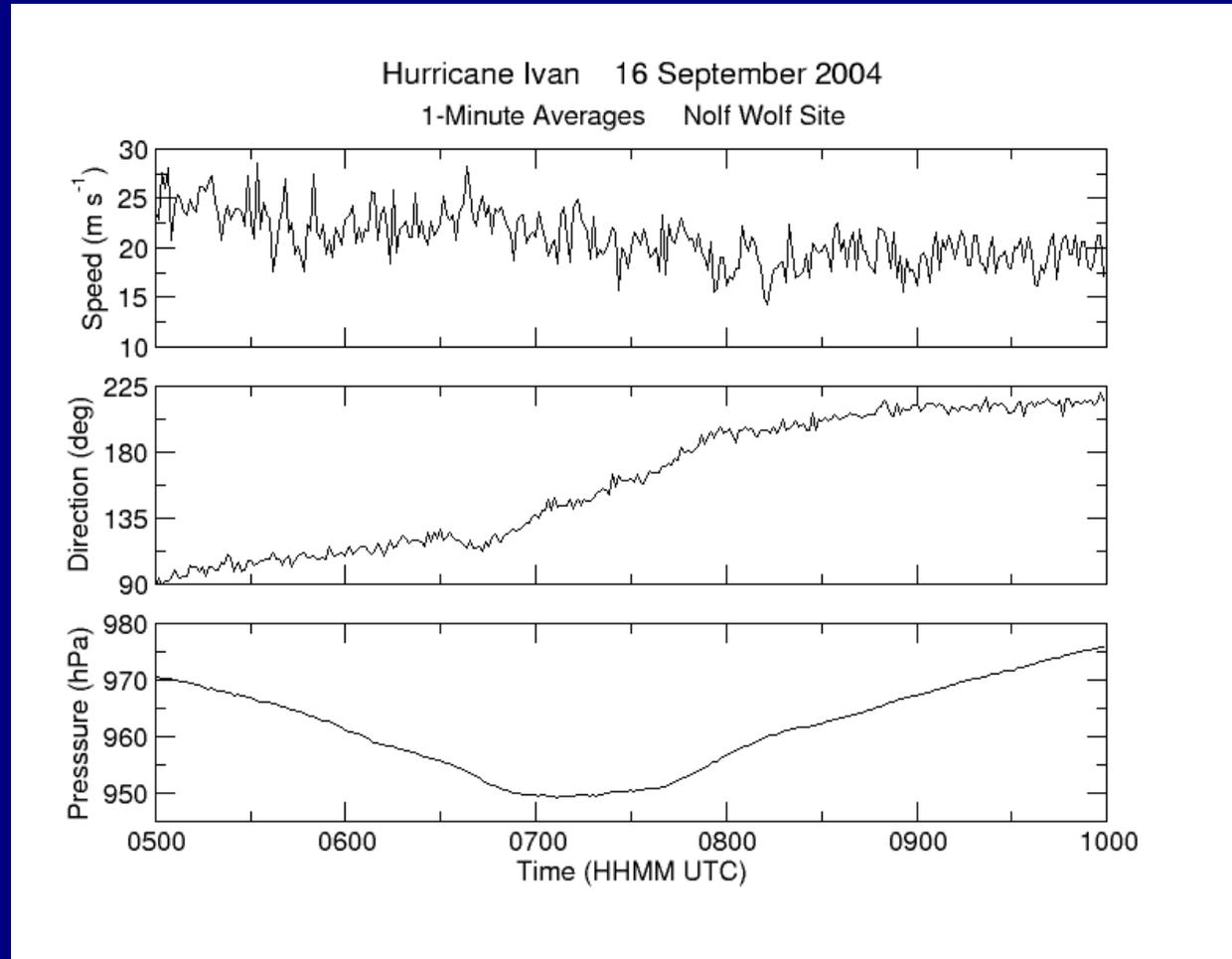


Wind speed and direction showing little or no fouling by rain



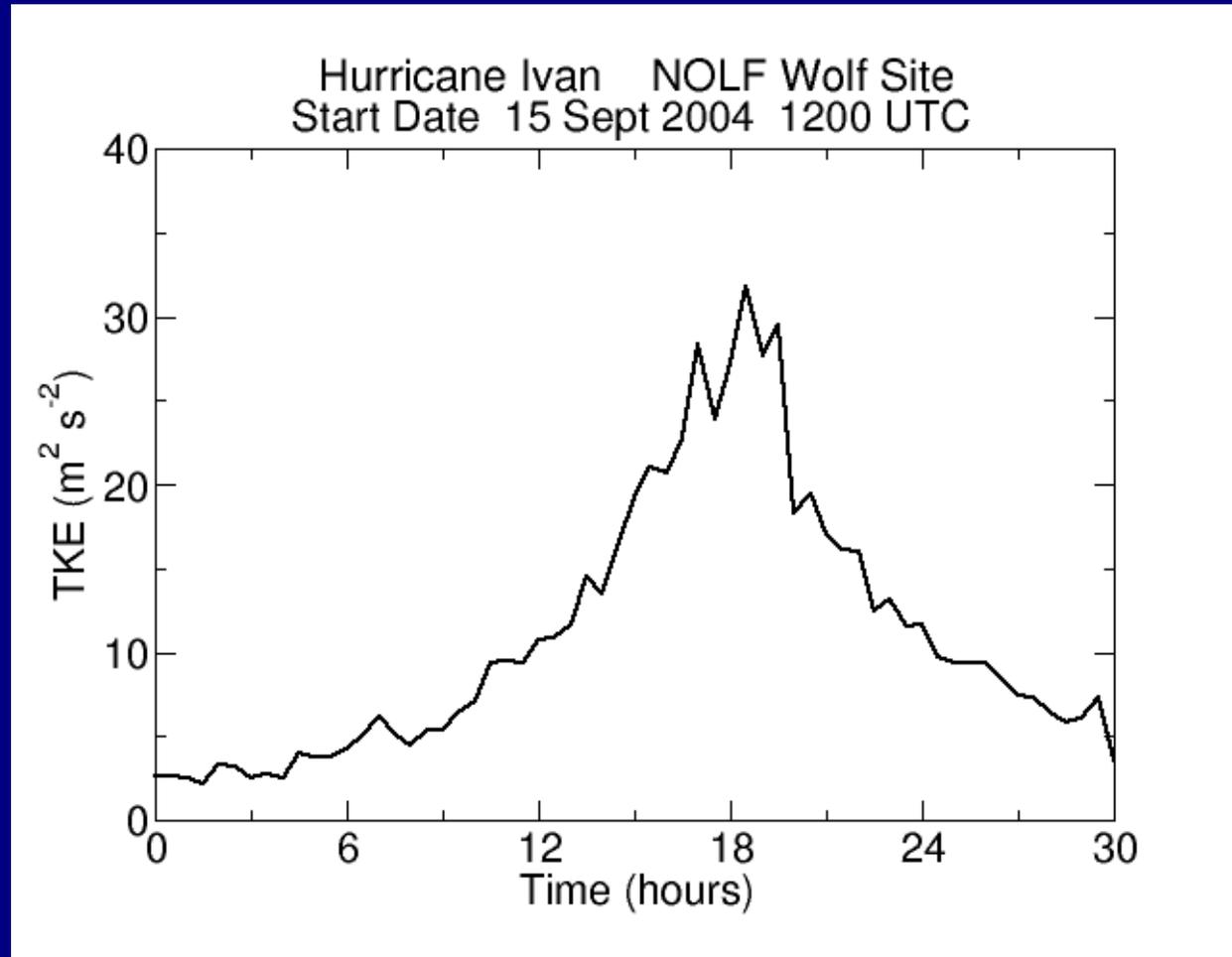
Wind-speed spectrum showing expected slope in inertial subrange

Ivan Example Data

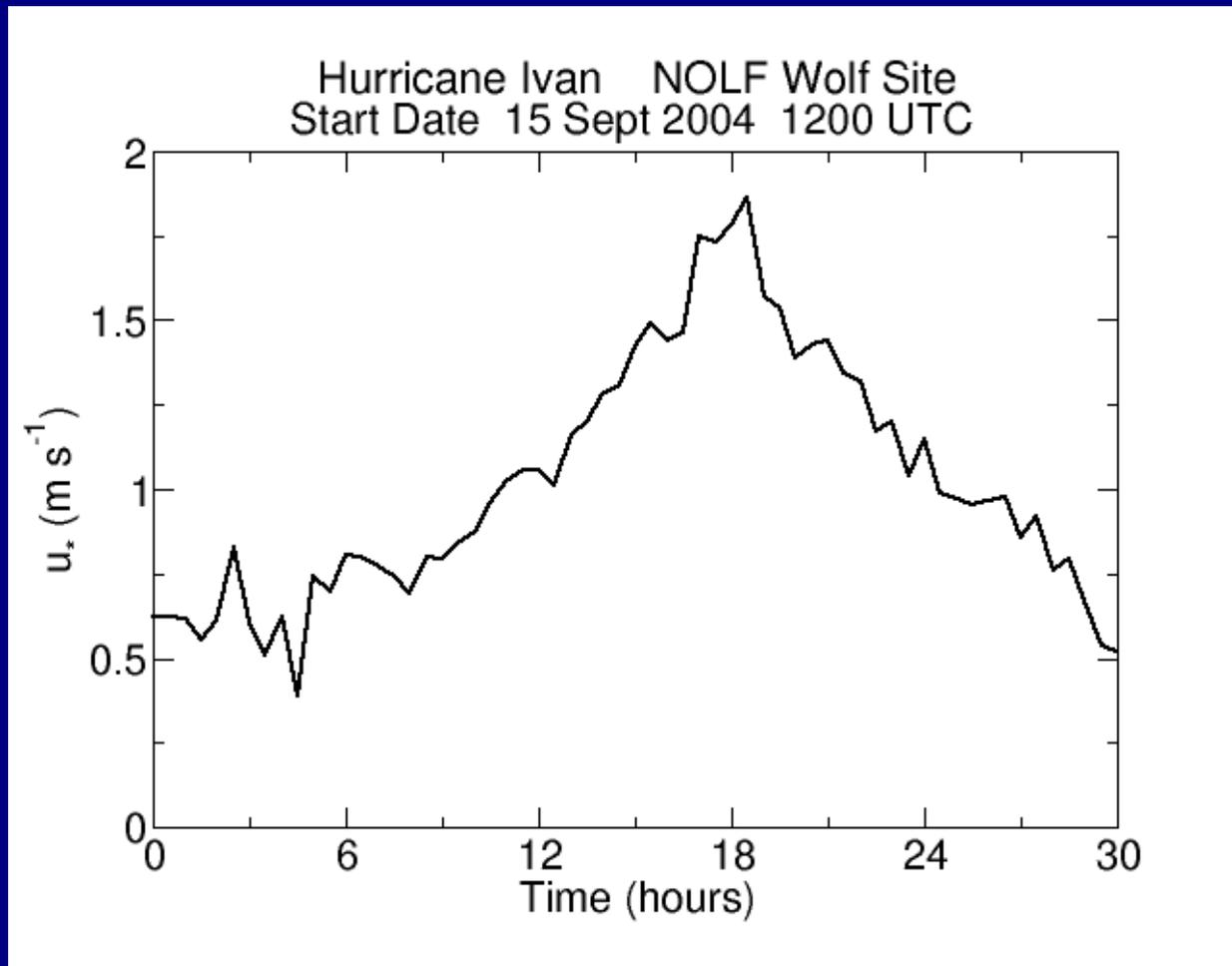


1-minute averages (usual definition of "sustained" wind)
Maximum gusts to 50 m/s (112 mph)

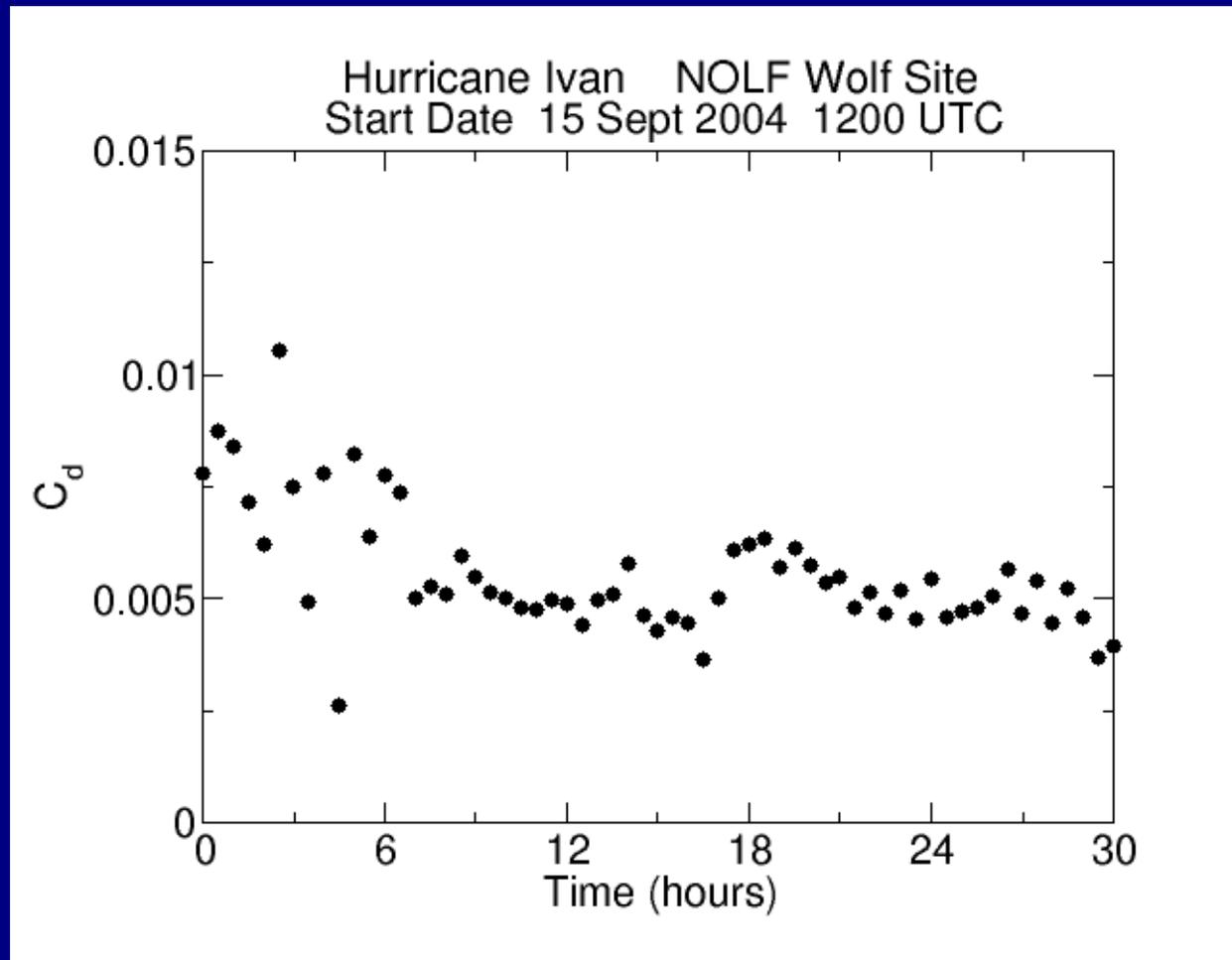
Ivan Turbulent Kinetic Energy



Friction Velocity



Drag Coefficient



Future Plans

- Analysis of existing data and publication
- Collaboration with Texas Tech and others
- Improve temperature-sensor housing
- More compact system using PC/104 computer modules that would fit inside the sphere and reduce power consumption
- Future deployments (continued coastal and possibly buoy)
- Big-hole aircraft probe?