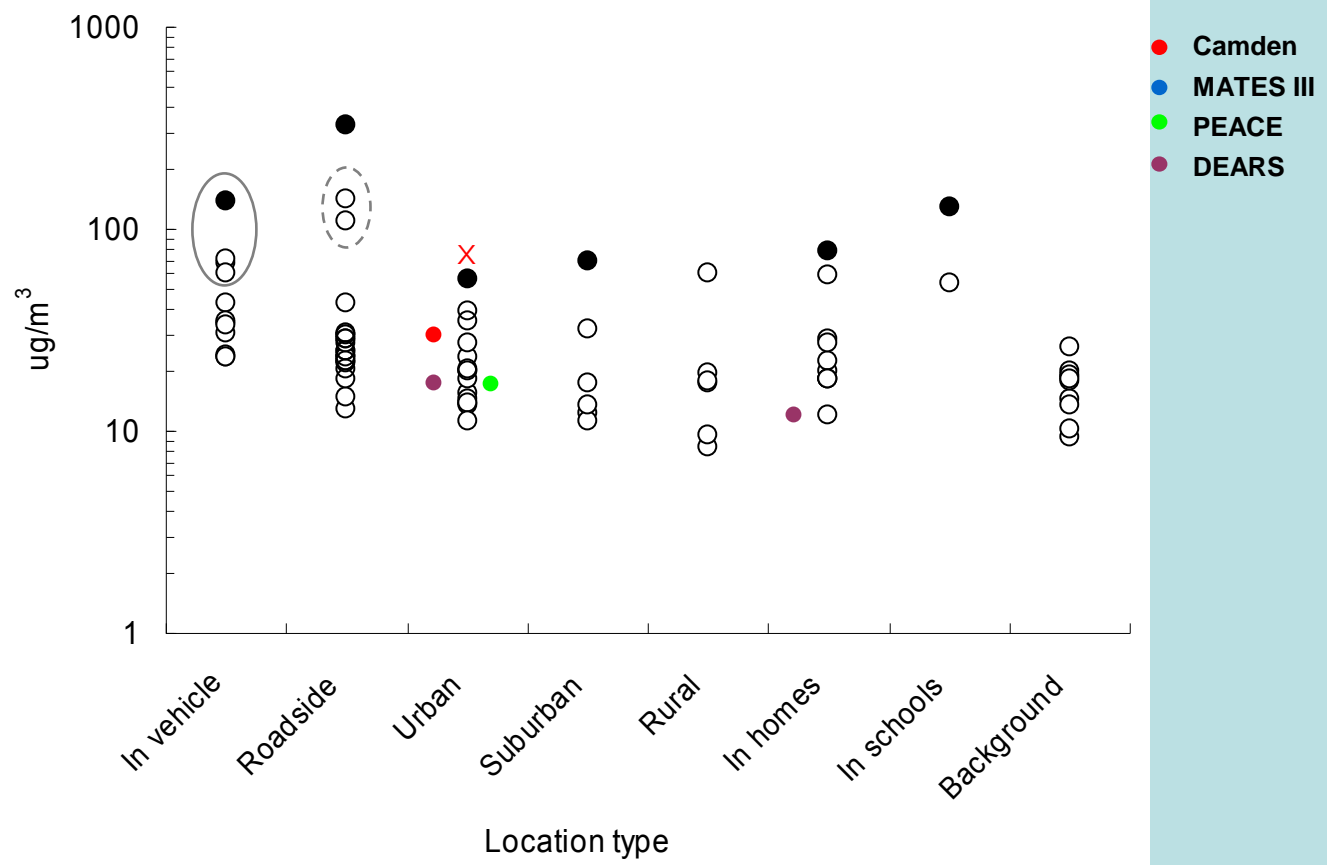


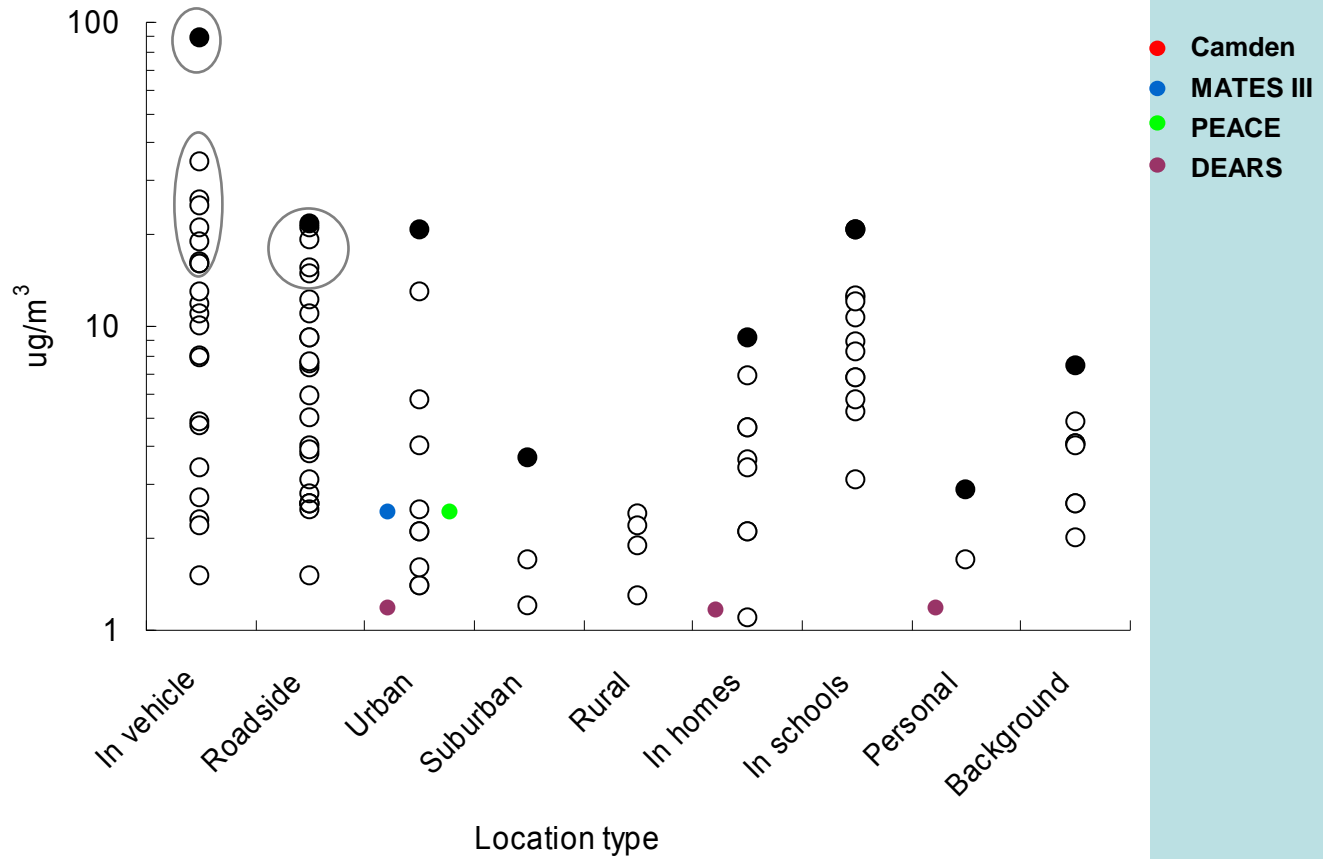
Some Considerations in Identifying “Hot Spots”

- Characterization of Target Sources -
location, high source strengths, type of pollutants emitted, etc.
- Selection of Target Pollutants -
individual pollutants, surrogates, health impacts, etc.
- Source Impact in Space and Time –
meteorology, source use, populations impacted, etc.
- Potential for Exposure –
are the concentrations “high”
where people live relative to the pollution levels from the sources
- Identification of Background Levels –
regional, urban and local
- Selection of Reference Area for Comparison
- Control for Other Sources/Environments –
residences, in vehicles, personal exposures, etc.
- Type and Size of At Risk and Control Population

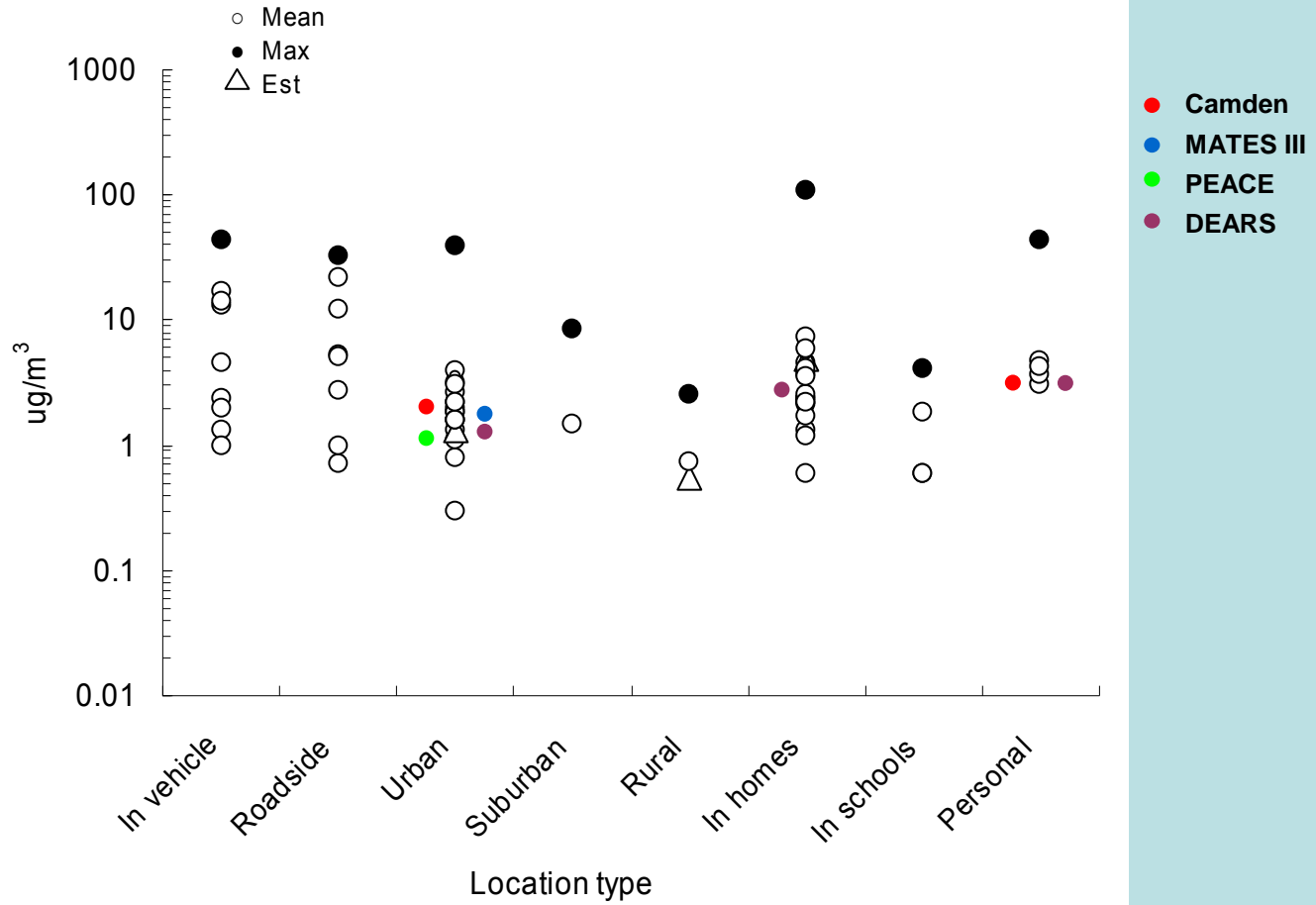
PM_{2.5}



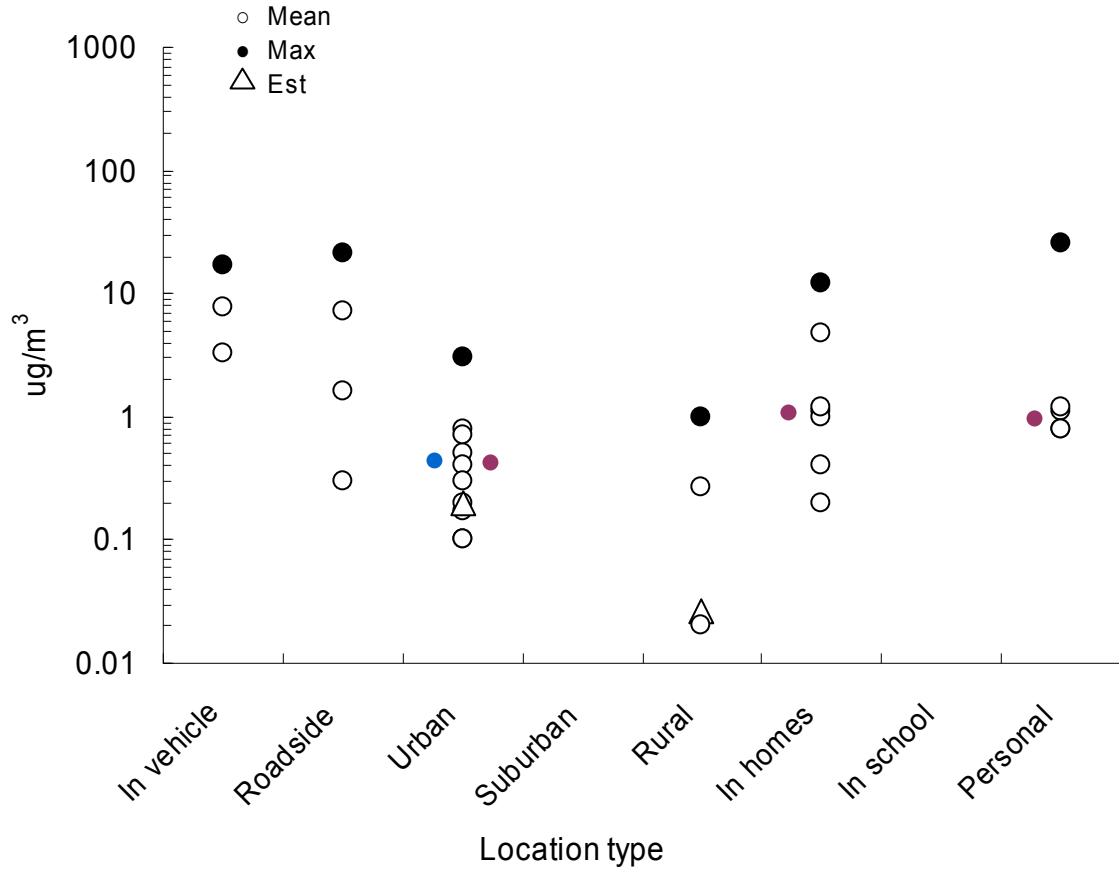
Black Carbon



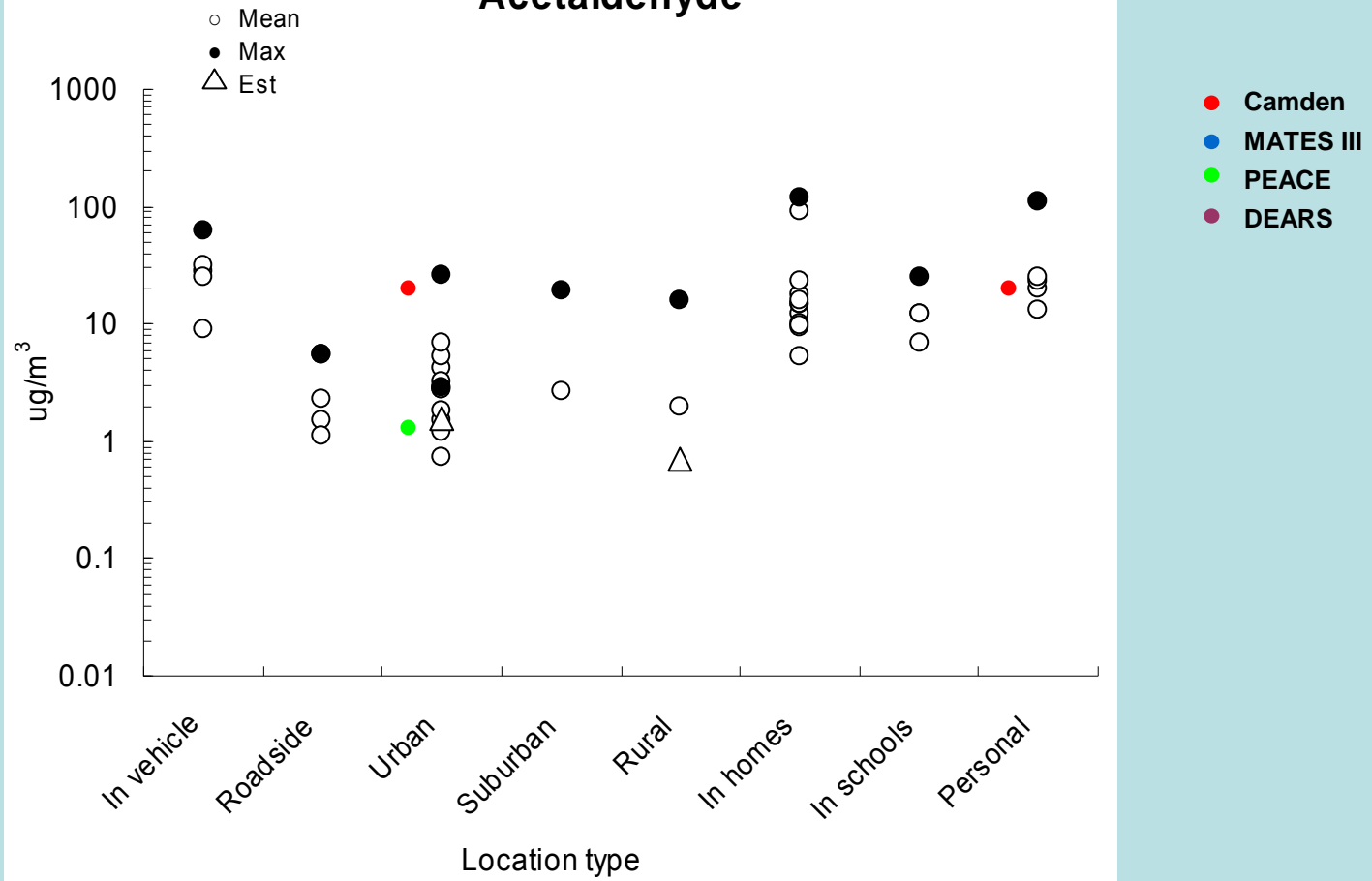
Benzene



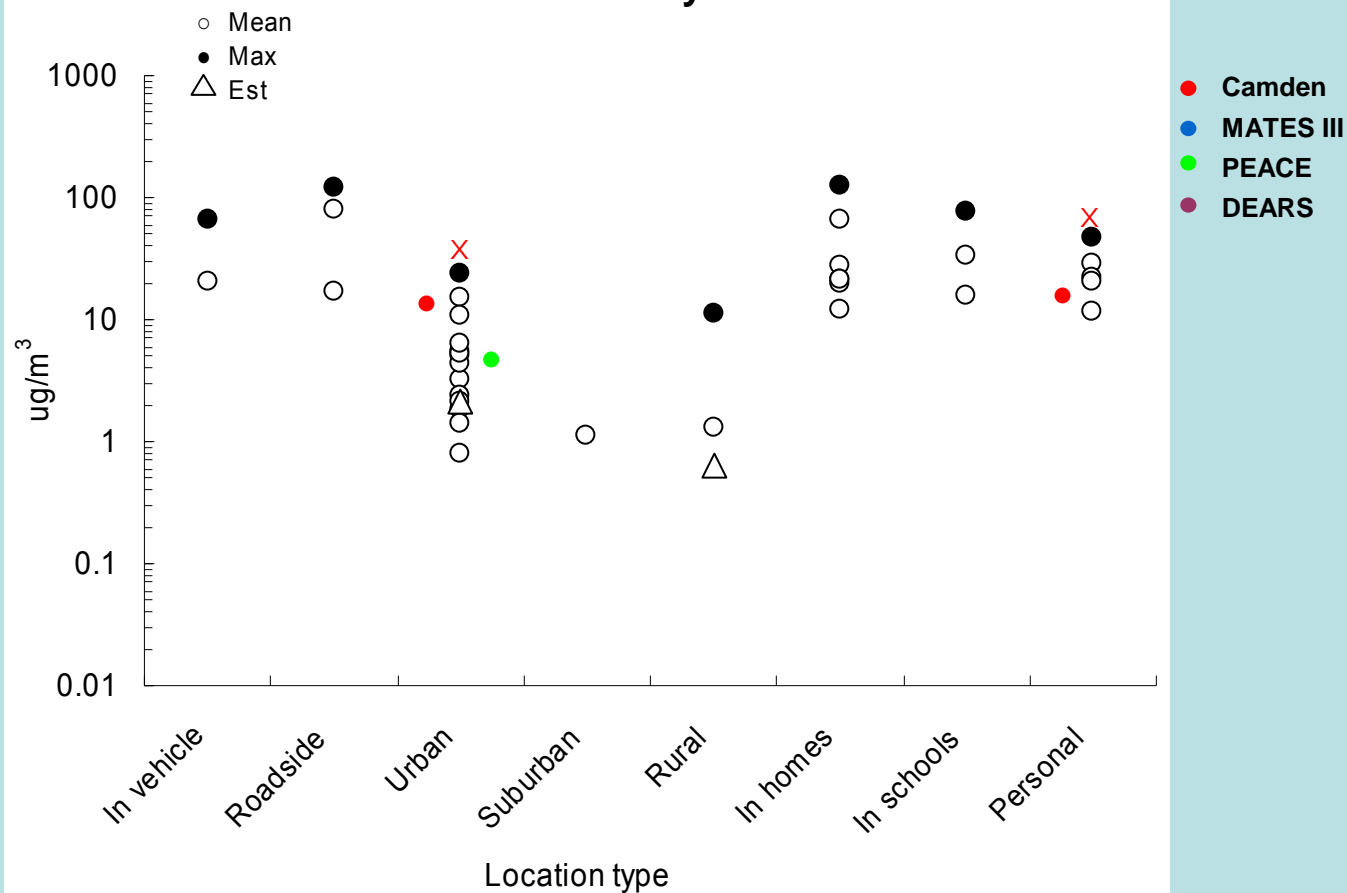
1,3-Butadiene



Acetaldehyde



Formaldehyde



Some General Observations from “Hot Spots” Studies

- Characterization of sources, particularly motor vehicle sources, has a number of challenges, including:
 - a) identification of sources – location, type of emissions and quantity of emissions
 - b) conditions of use – for motor vehicles this includes such variables as –
traffic characteristics, weather and geography, time period
 - c) identification of individual pollutants or proxies
- Need to account for the variable nature of ambient air pollutant concentrations in space and time.
- Challenge in assessing local source impact in a background of contaminants from
 - a) regional background concentrations
 - b) stationary outdoor and area sources
 - c) indoor sources
- Difficulty in establishing control area

Questions Related to “Hot Spots”

- Are concentrations measured in the four “potential hot spot” studies higher than those typically encountered in the ambient environment and distinguishable from typical urban or control areas?
- How can the contribution of sources (e.g., vehicles) and their related pollutants be best assessed? Should the focus be on the source, complex pollutant mixes, categories of pollutants, individual pollutants....?
- How can the spatial and temporal variability of emissions be best captured, particularly in epi studies?
- Are the concentrations high enough to justify undertaking health studies?