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Colorado Long Term Light-Duty Vehicle On-road Emission Trends (Presentation)

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Publication Statement

Public Domain

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Colorado Long Term Light-Duty Vehicle On-road Emission Trends

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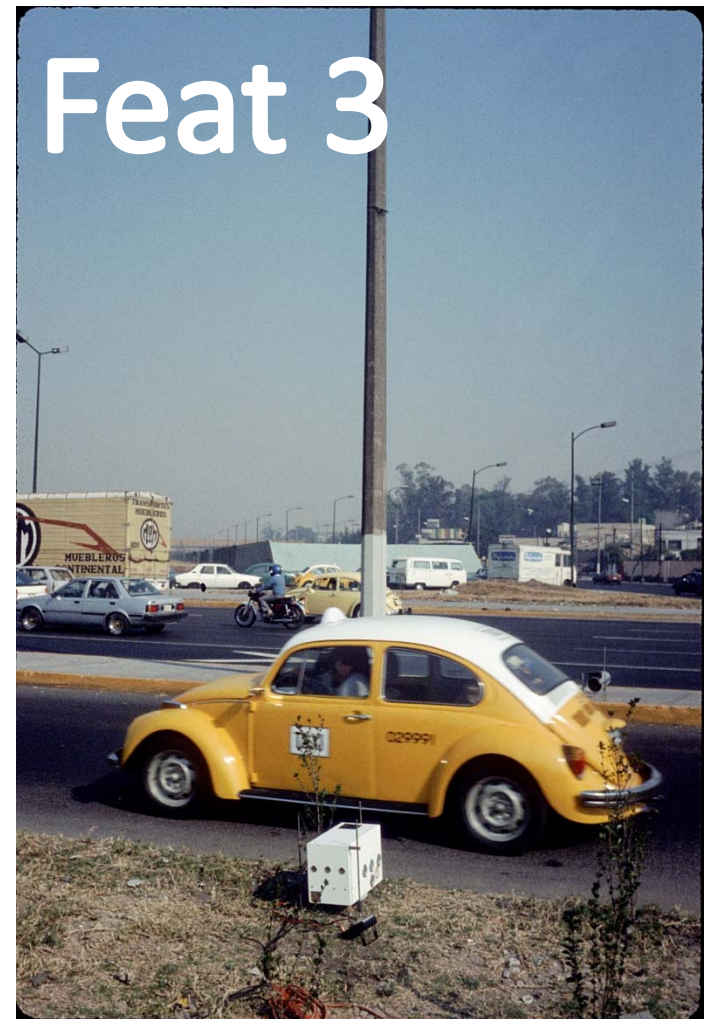
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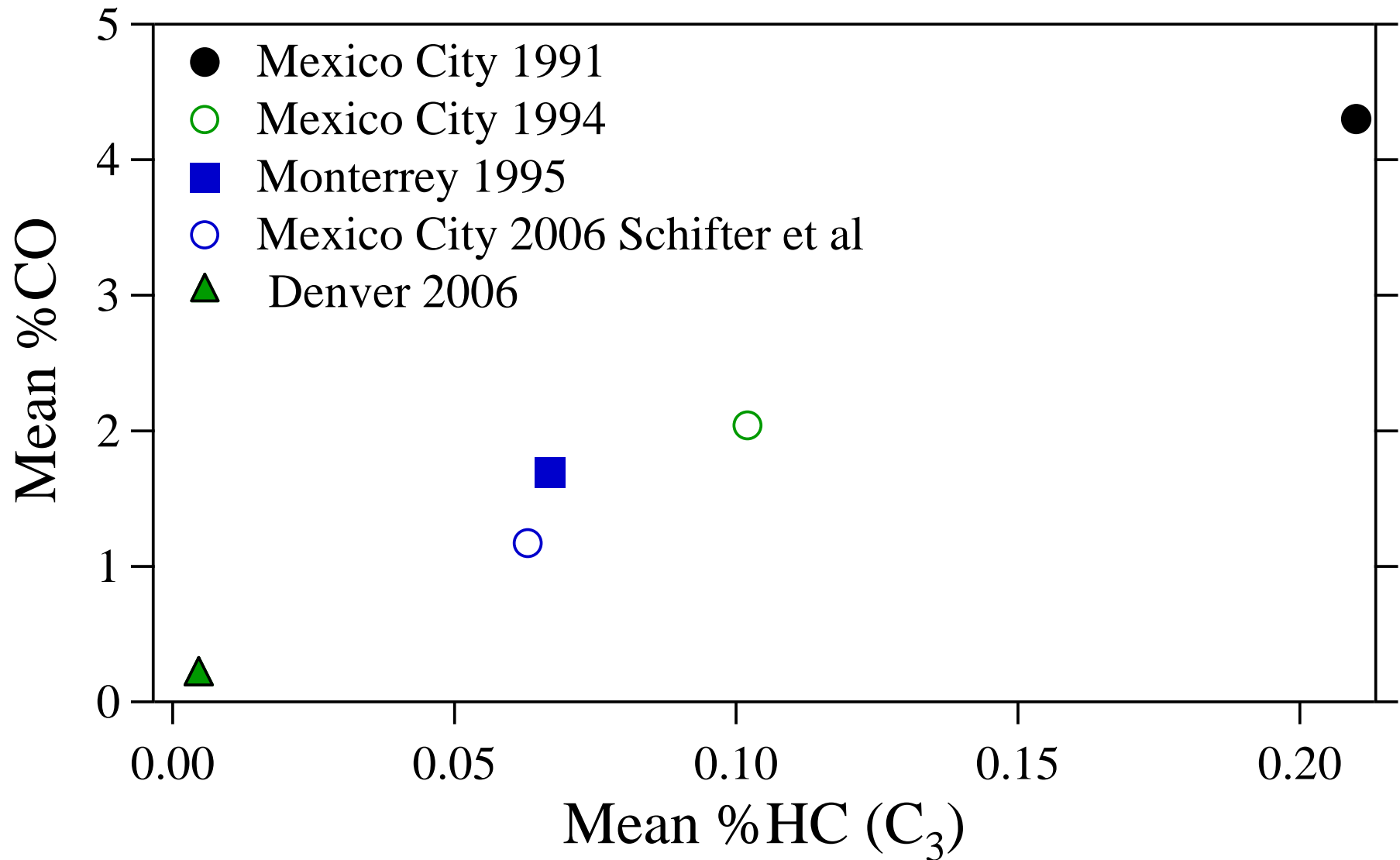
University of Denver

Jim Sidebottom of the
Colorado Department of Public Health & Environment

History of FEAT Hardware



Historical Mexico City Measurements

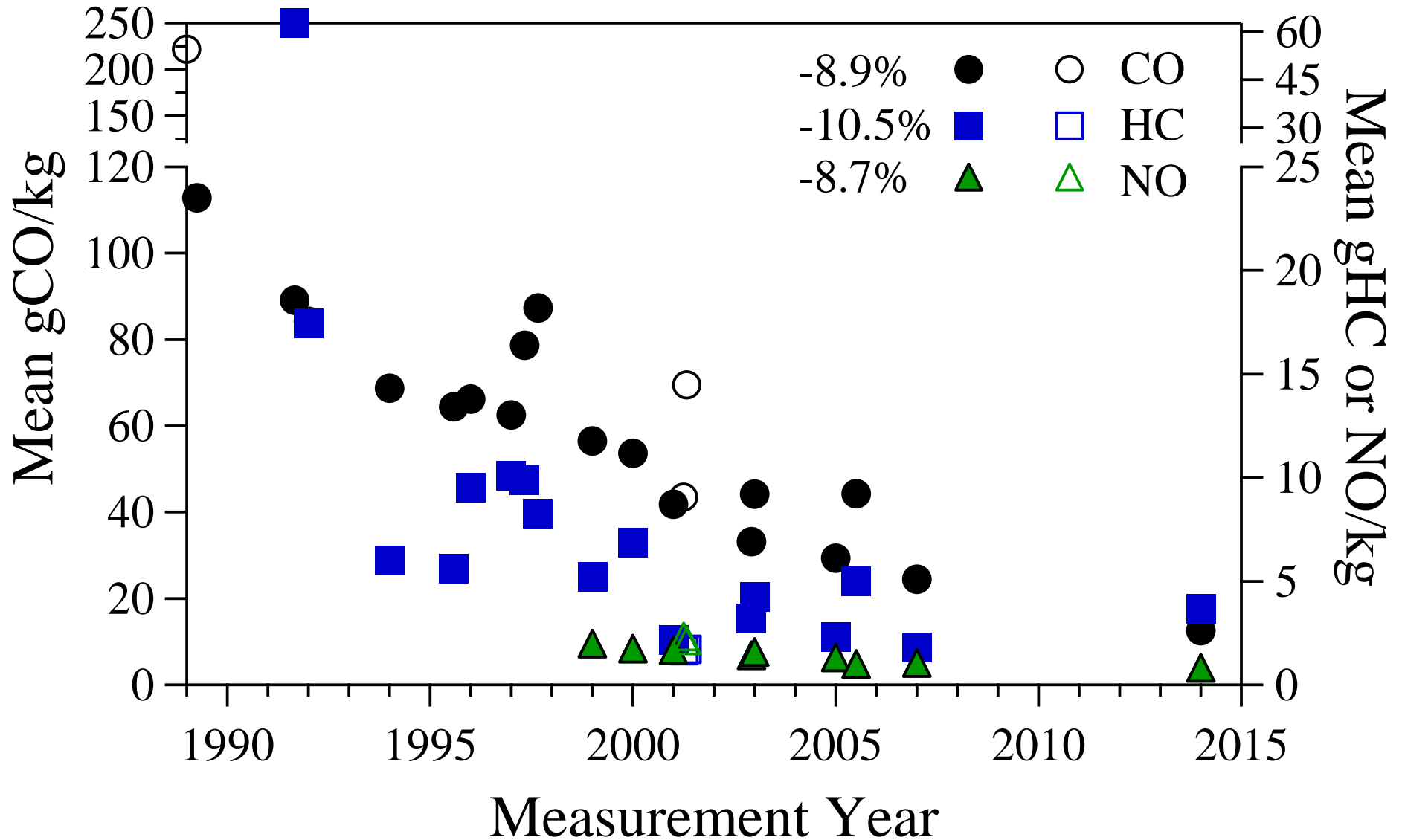


Schifter et al., Environ. Monit. Assess (2008) 137:459-470.

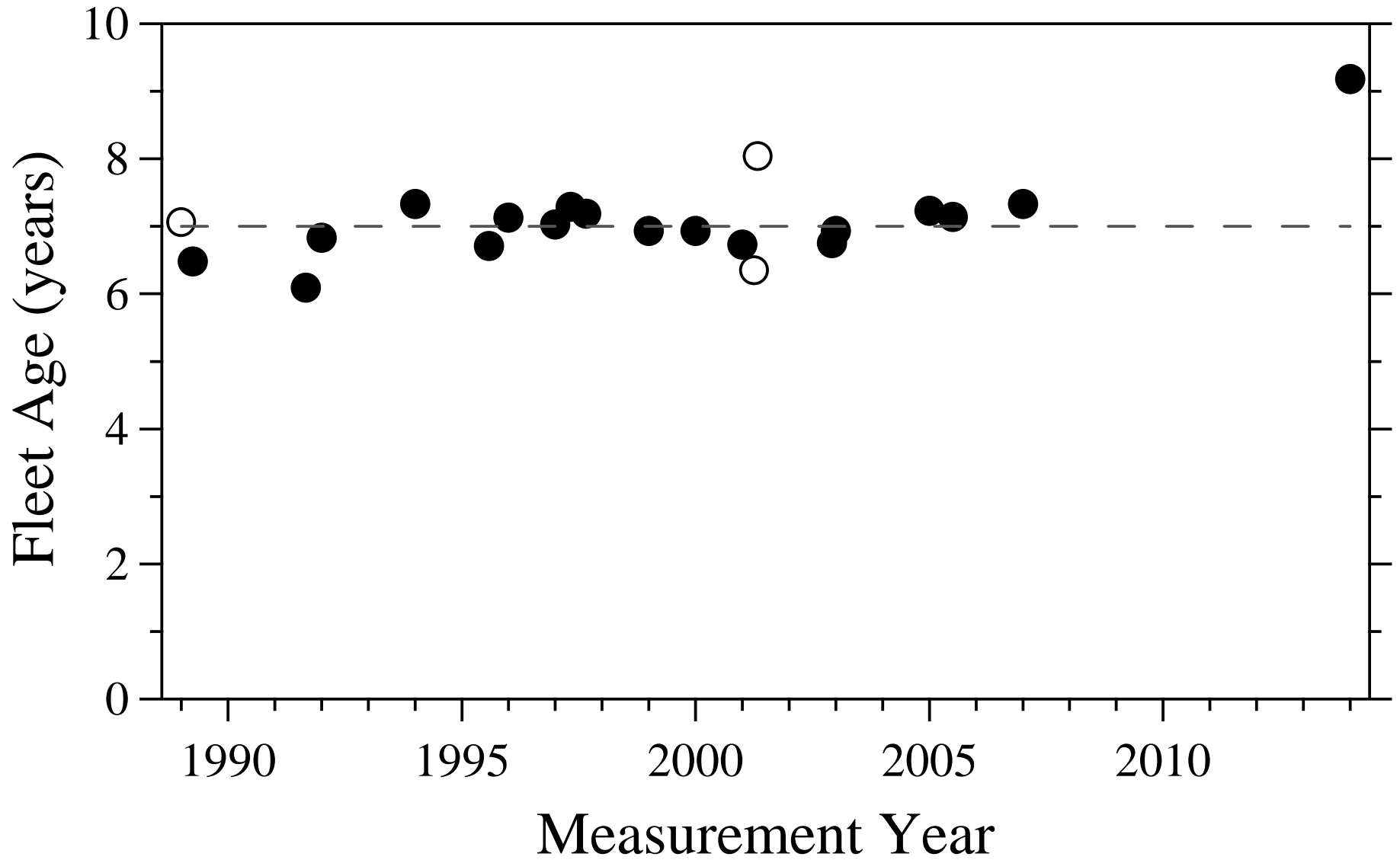
Colorado Measurements

- Twenty one data sets from 1989 to 2014 with more than 389,000 records.
- HC measurements start in 1991 and NO measurements in 1999
- All but three of the data sets were collected in the Denver area
- All data and related publications are available at www.feet.biochem.du.edu

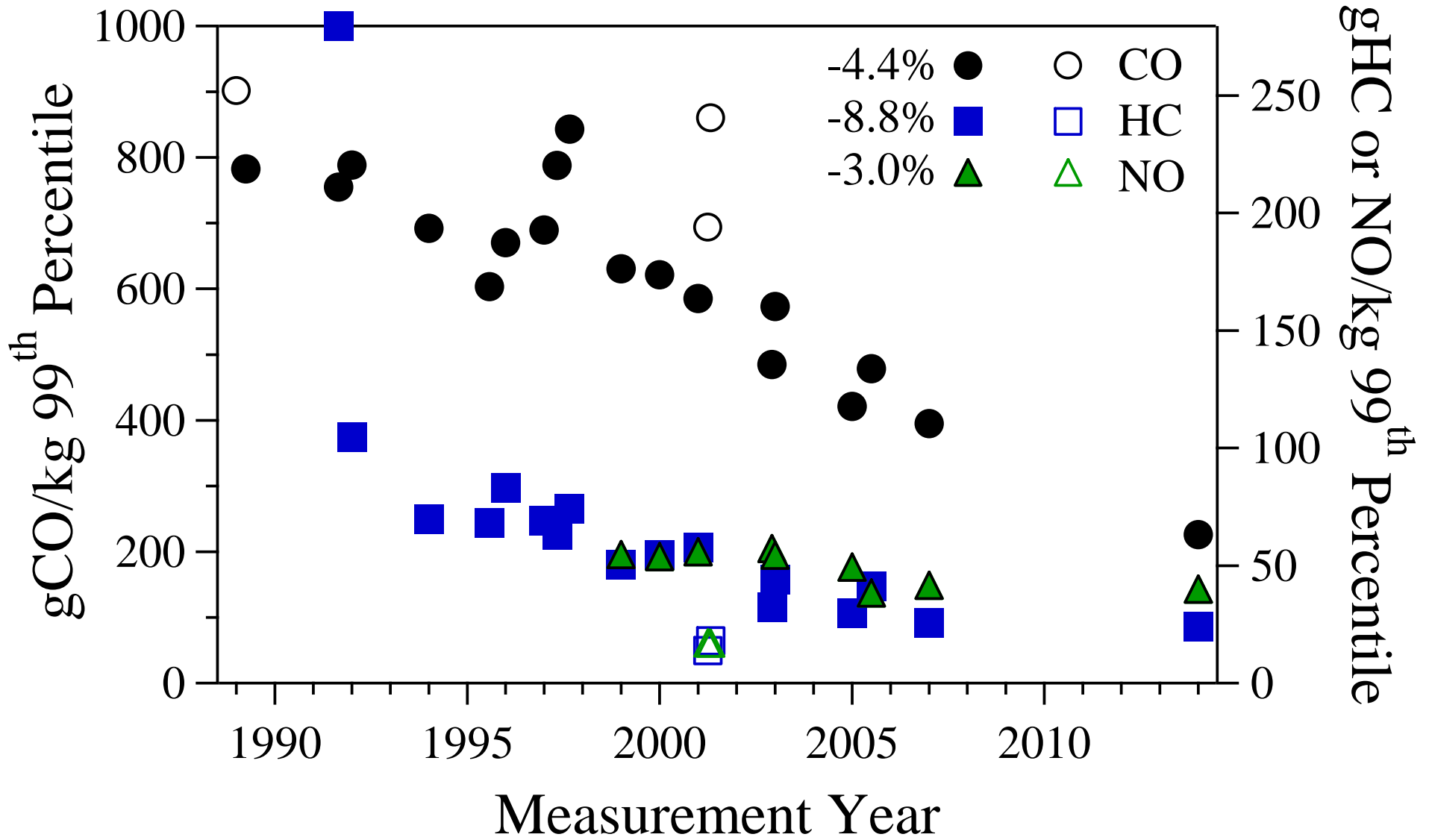
Colorado On-Road Mean Emission Trends



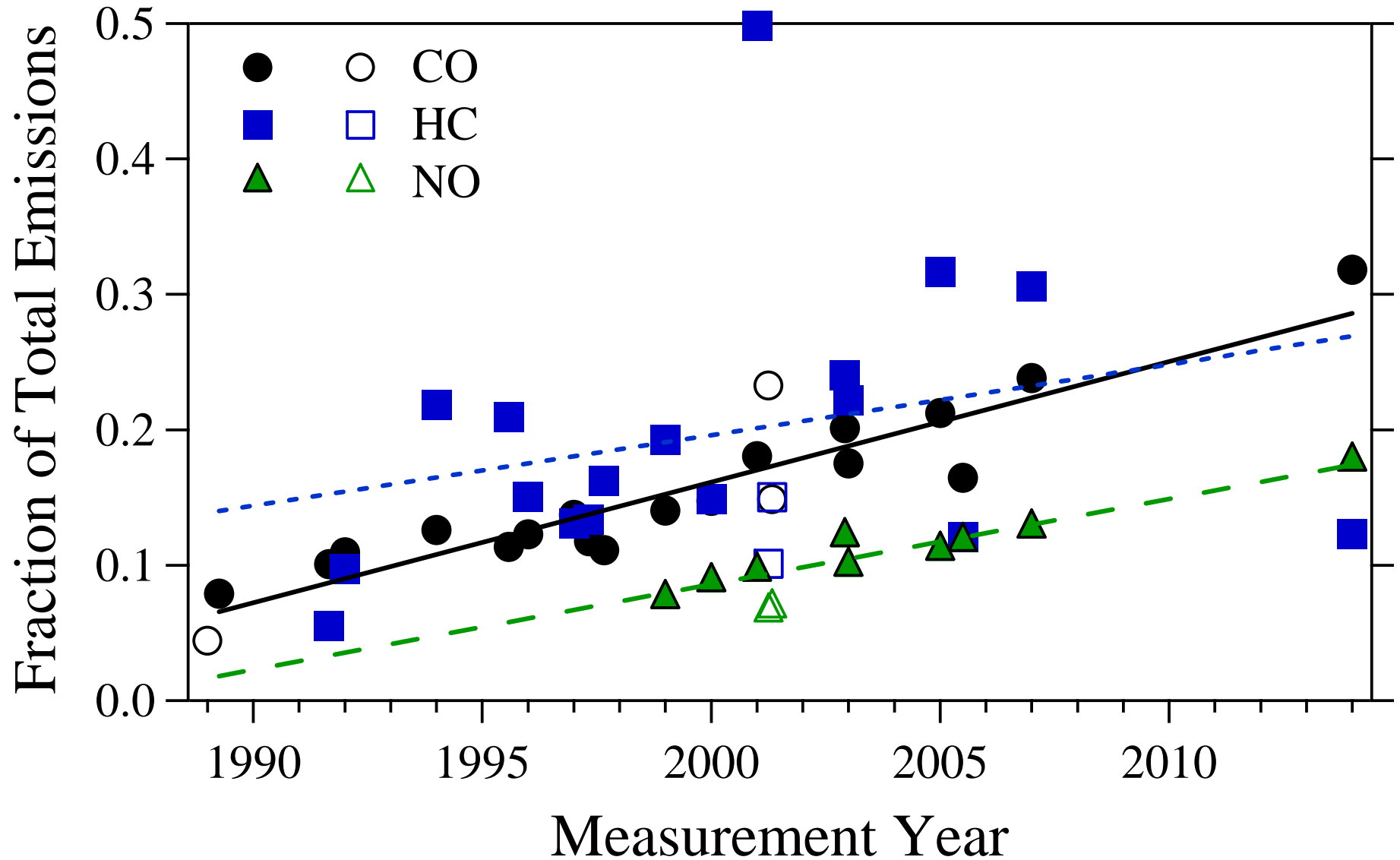
Colorado On-road Fleet Age Trends



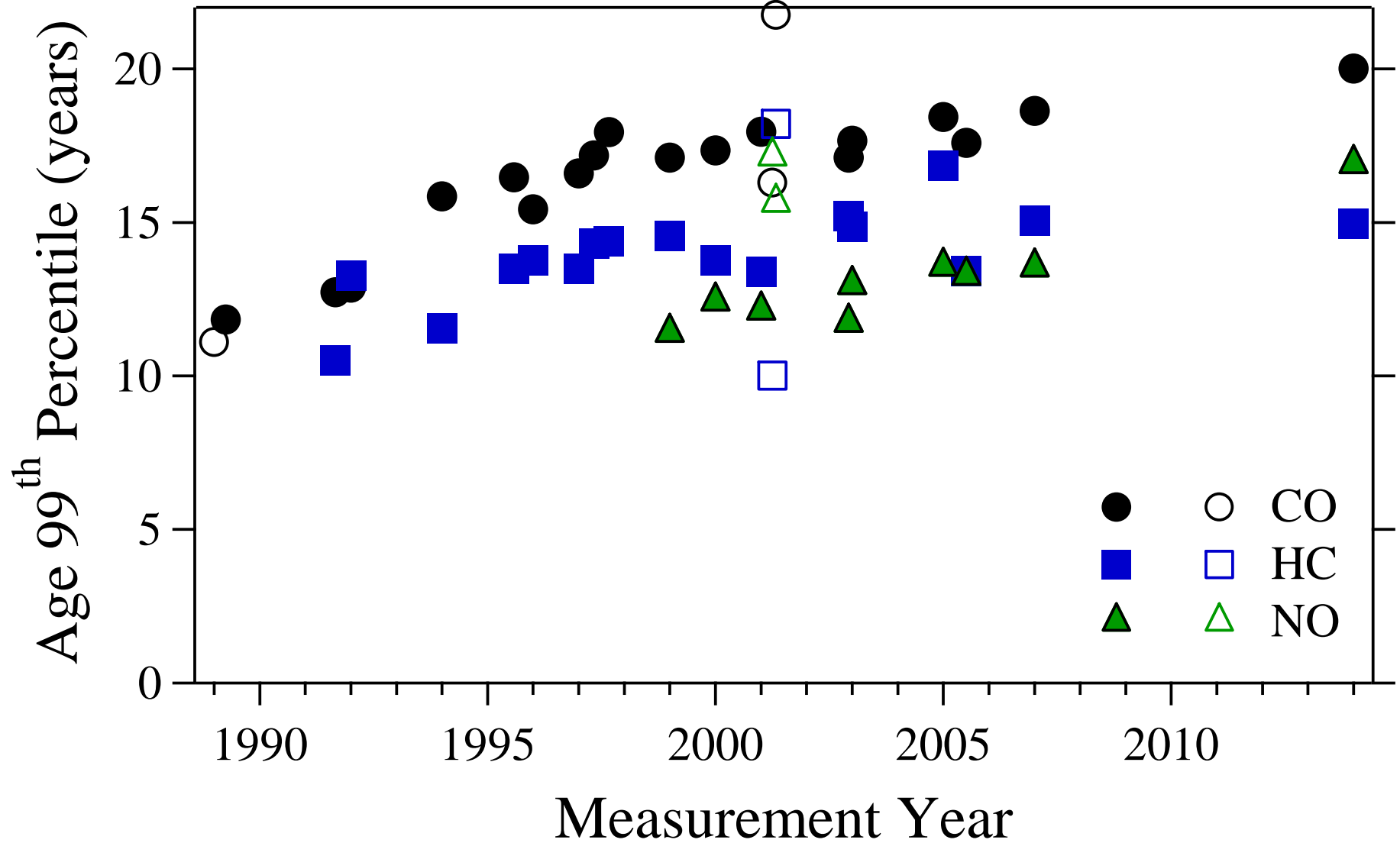
Colorado 99th Percentile Trends



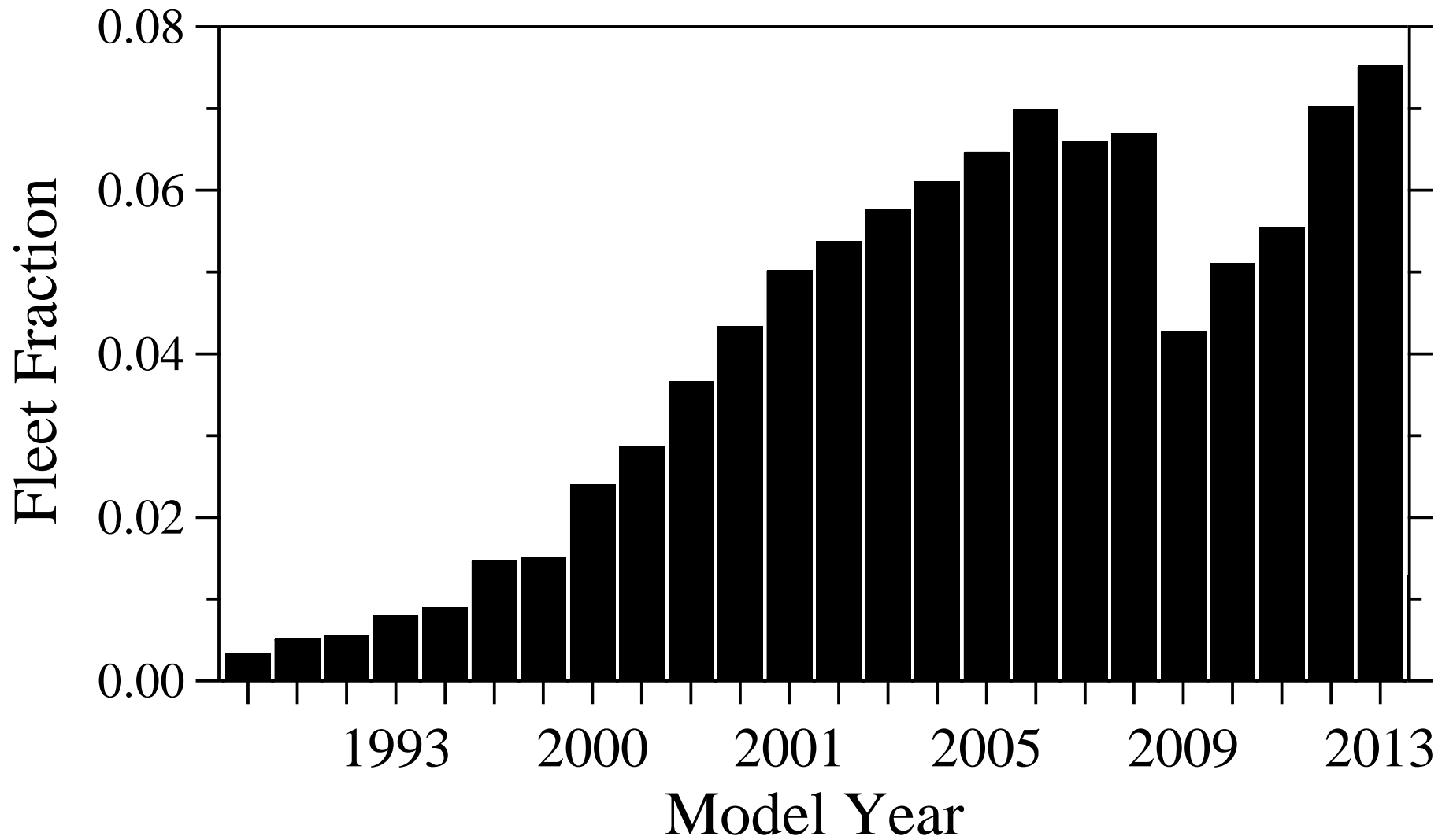
Colorado 99th Percentile Emission Fractions



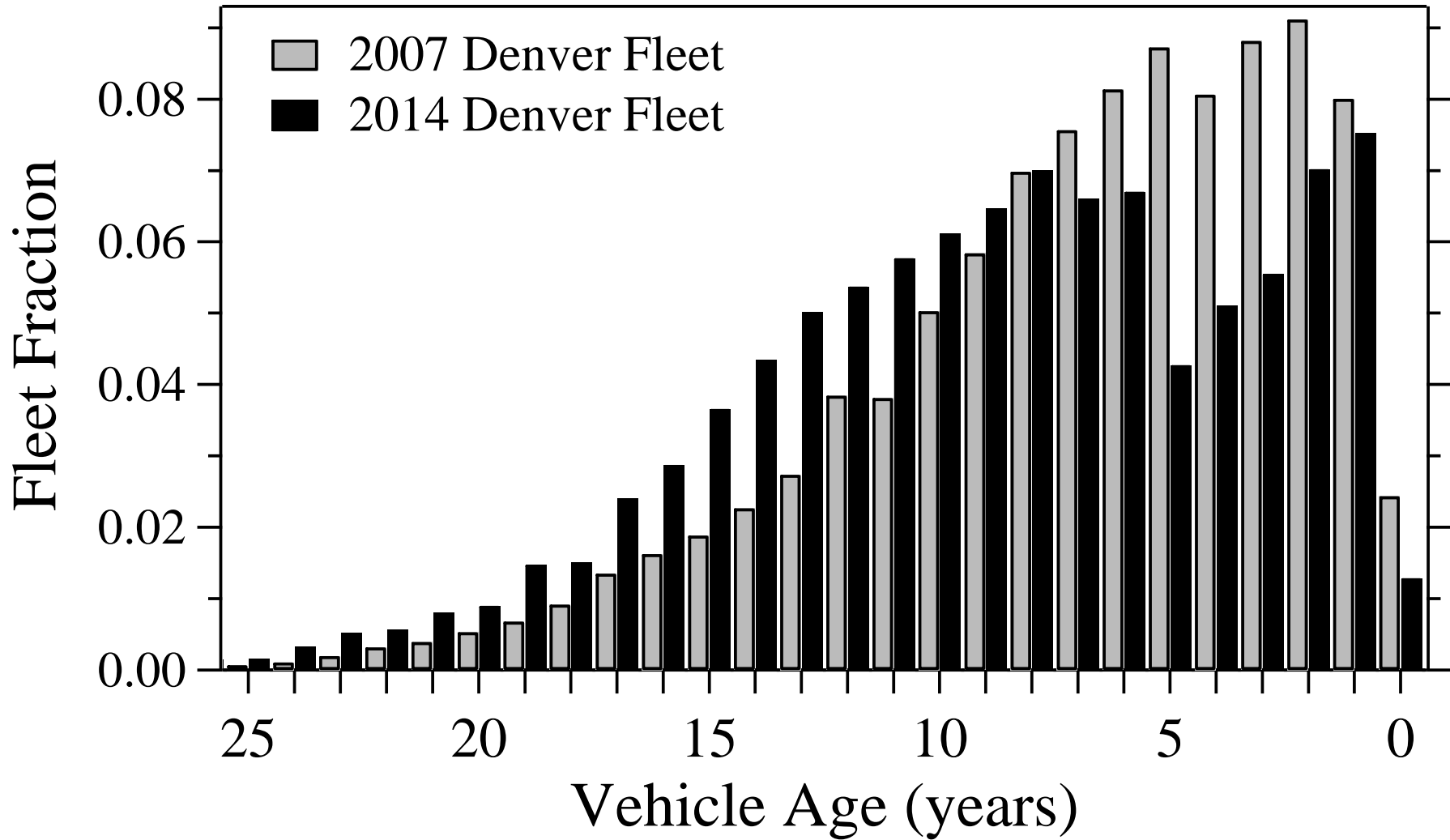
Colorado 99th Percentile Age Trends



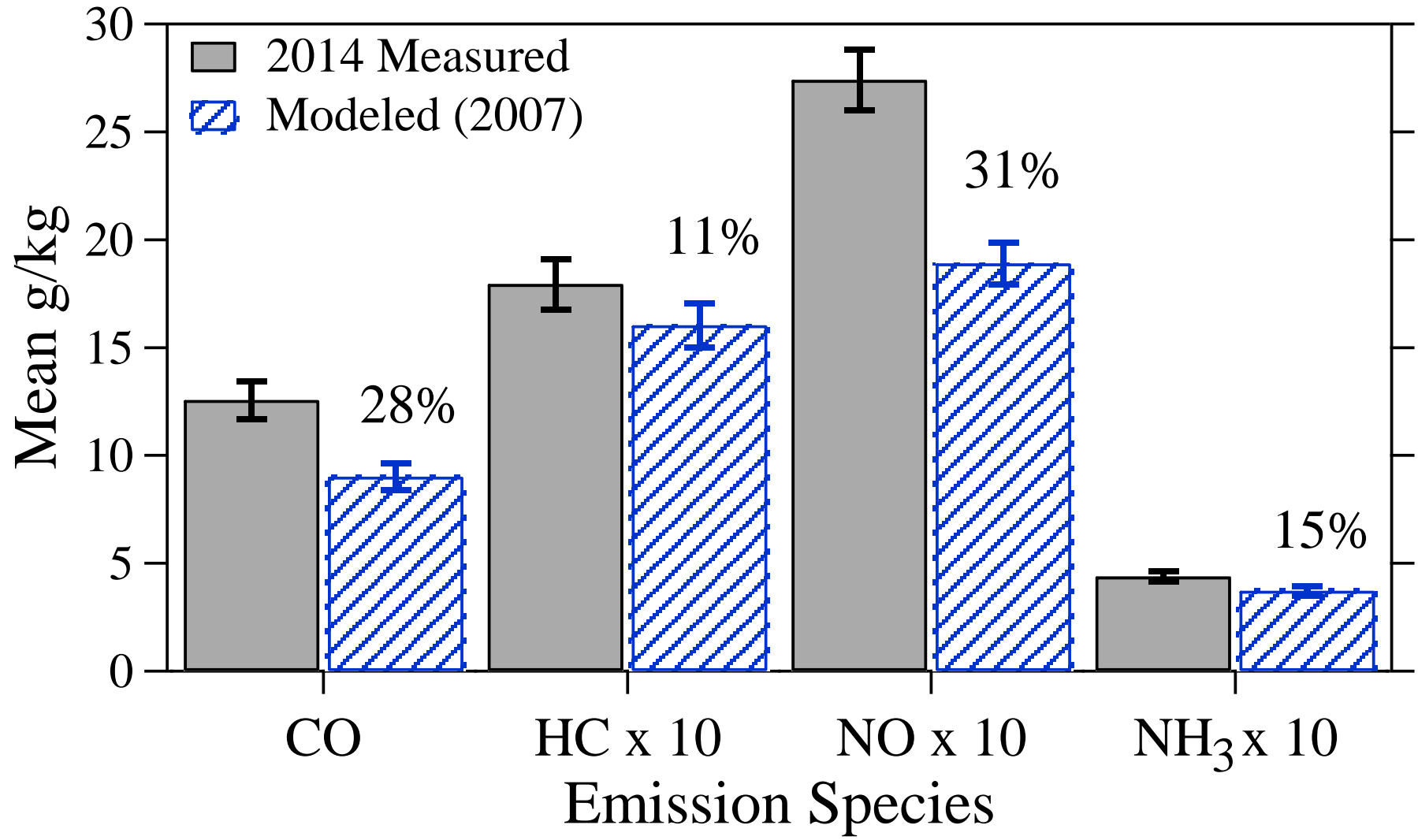
Denver 2014 Fleet Fractions



Denver 2014 and 2007 Fleet Age Fractions Comparison



Denver 2014 Measured and Modeled Mean Emissions



Conclusions

- Mean emissions in Colorado are decreasing at a faster rate than the 99th Percentile emissions.
- Emission distributions for all species are increasing in skewness with the 99th percentile for CO and HC accounting for ~30% of the total.
- The age of the 99th percentile fleet continues to increase for CO and NO
- The 2009-2010 recessions has resulted in the largest change in Colorado fleet age in the last 25 years and has slowed previous emission reduction rates.