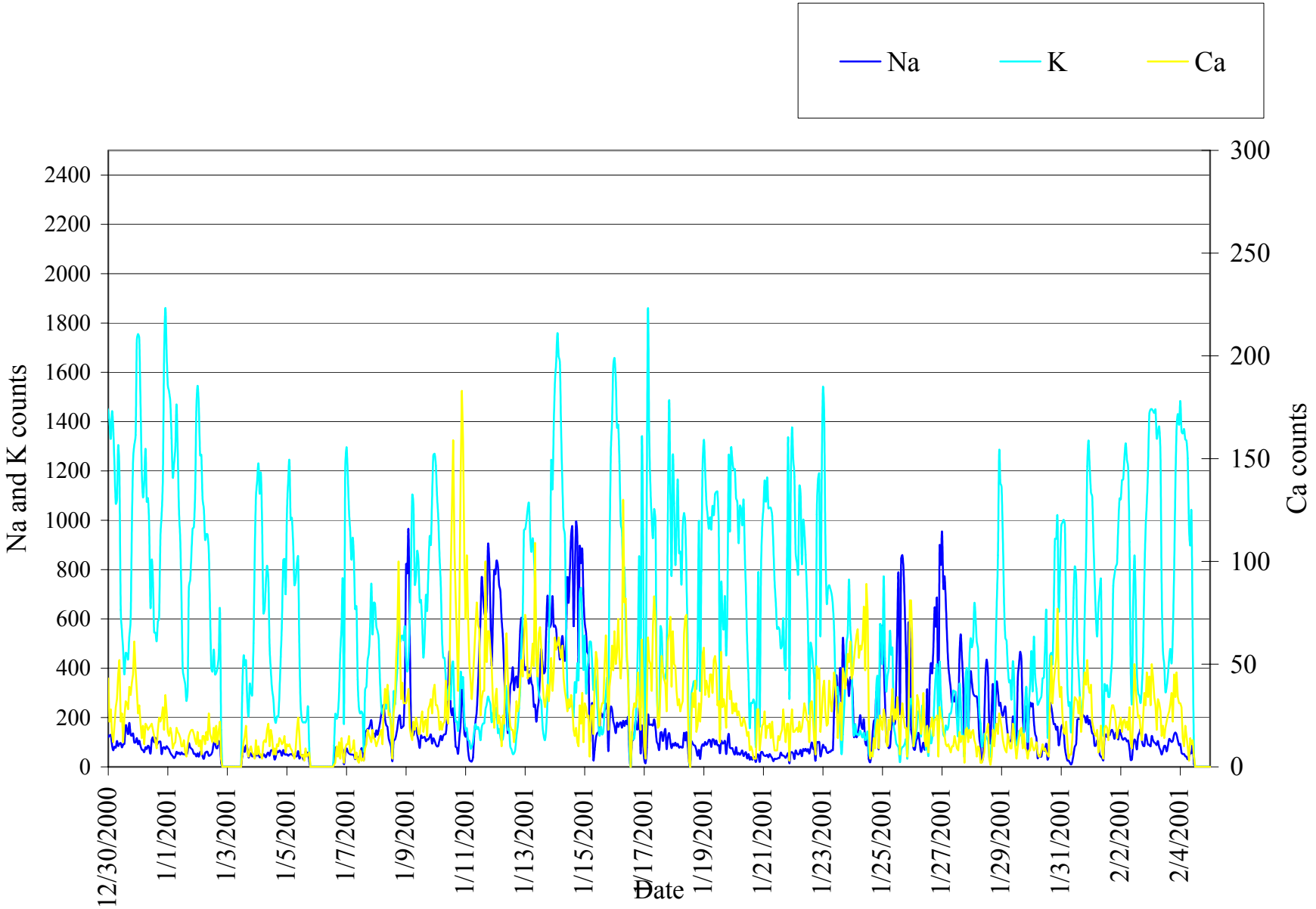


Figure 1: Temporal evolution of ATOFMS counts (unscaled) for Na-, K-, and Ca-containing particles sampled in Fresno, CA.

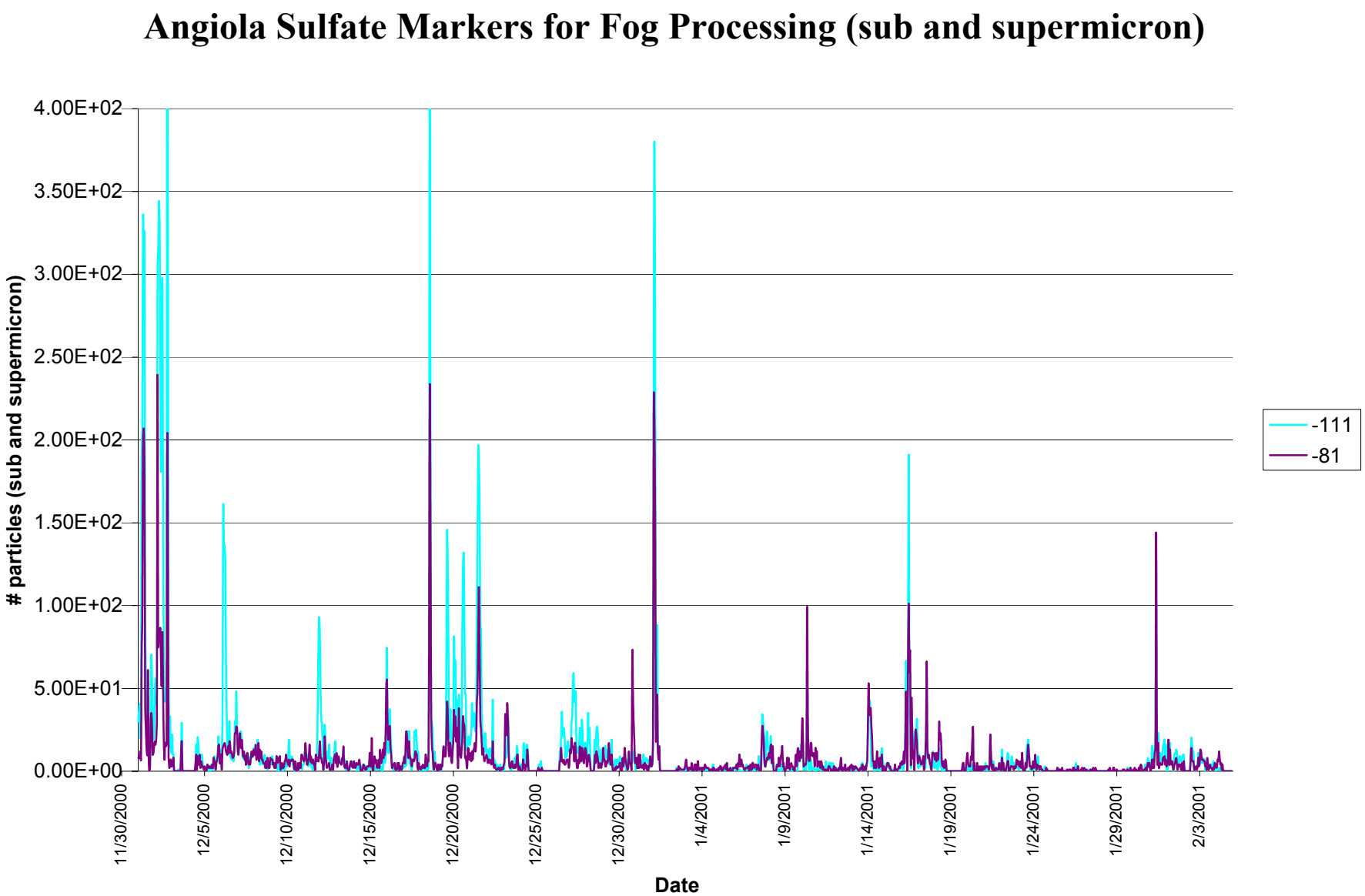


Figure 2: Temporal evolution of ATOFMS counts (unscaled) for fog markers in particles sampled in Angiola, CA.

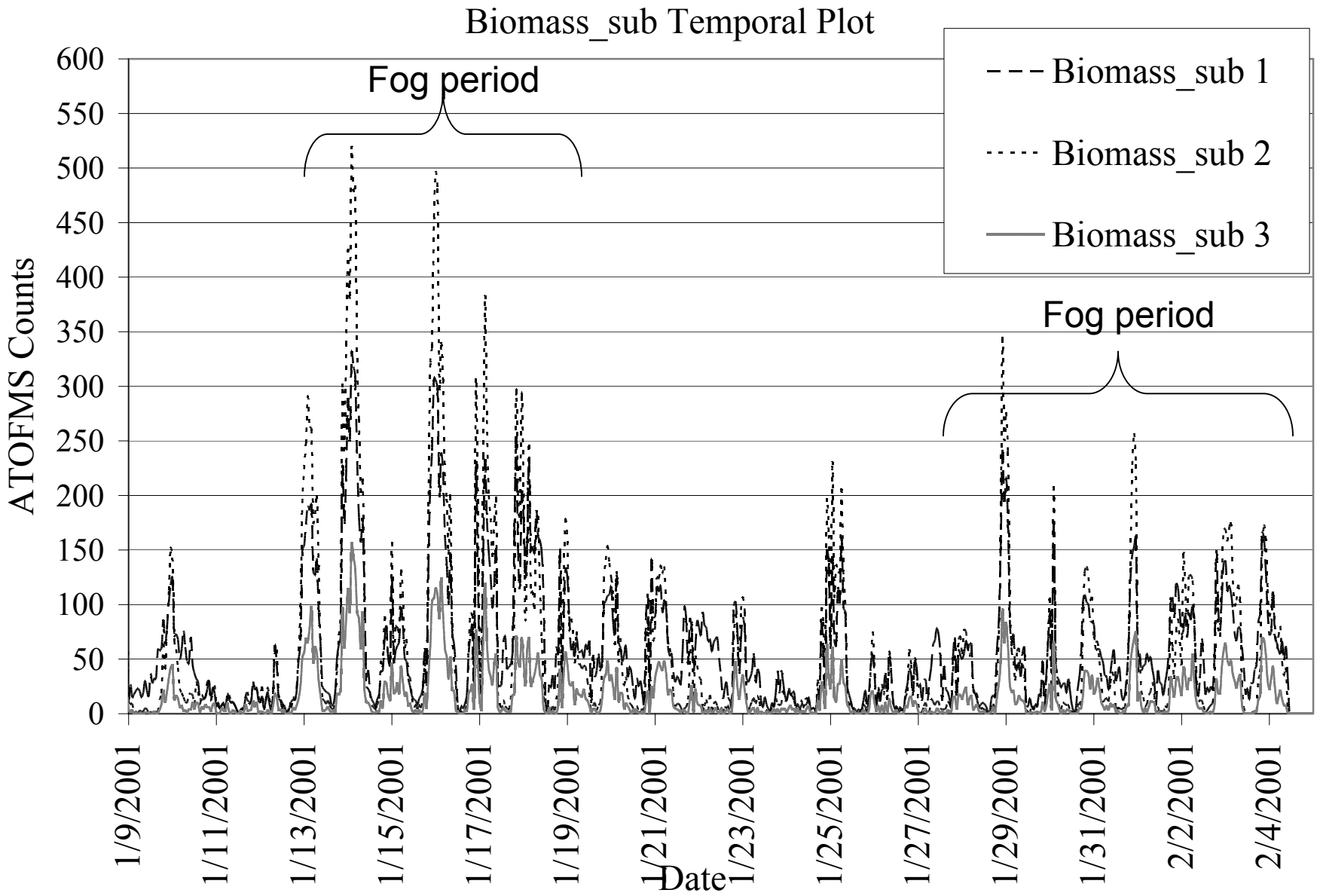


Figure 3: Temporal evolution of ATOFMS counts for particles containing biomass markers sampled in Fresno, CA. The particle types peaked at midnight almost every night during the study but especially during the fog events.

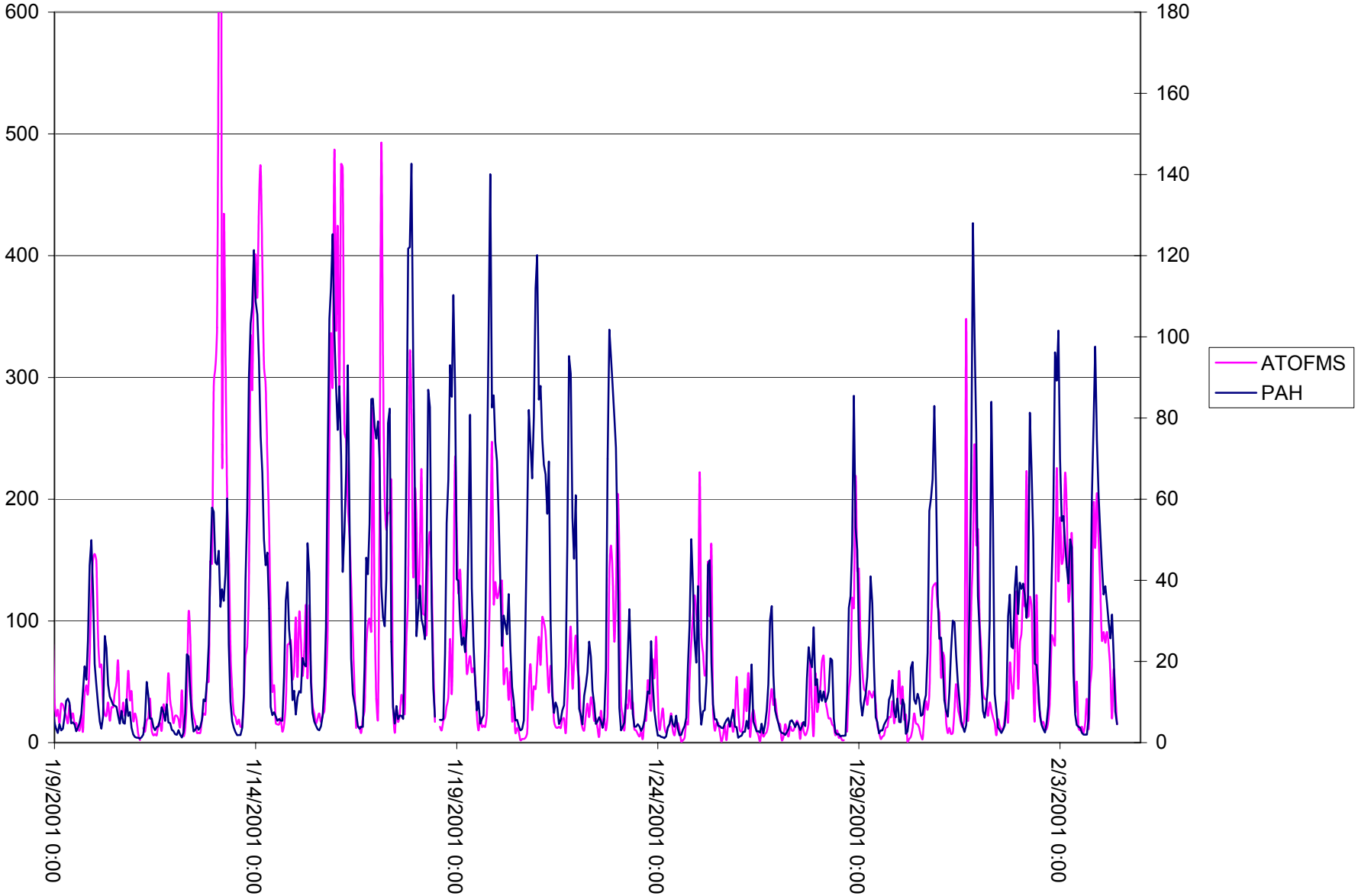


Figure 4: Temporal evolution of ATOFMS counts for particles containing aromatic markers sampled in Fresno, CA. The observed trends observed track those observed using a PAS an instrument that is also sensitive to aromatic species.

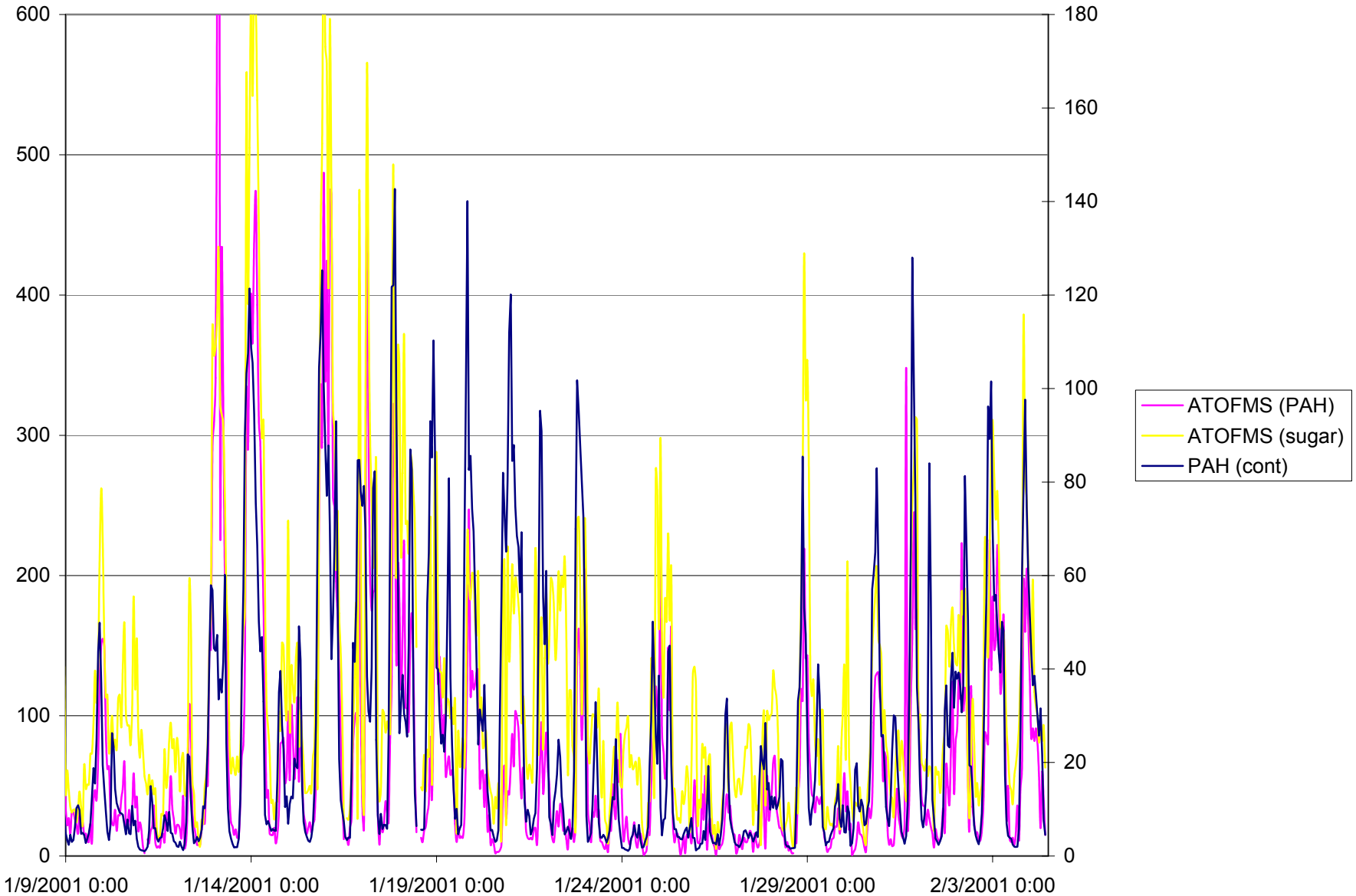


Figure 5: Temporal evolution of ATOFMS counts for particles containing PAH and sugar (wood smoke) markers sampled in Fresno, CA. The observed trends observed track those observed using a PAS an instrument that is also sensitive to aromatic species.

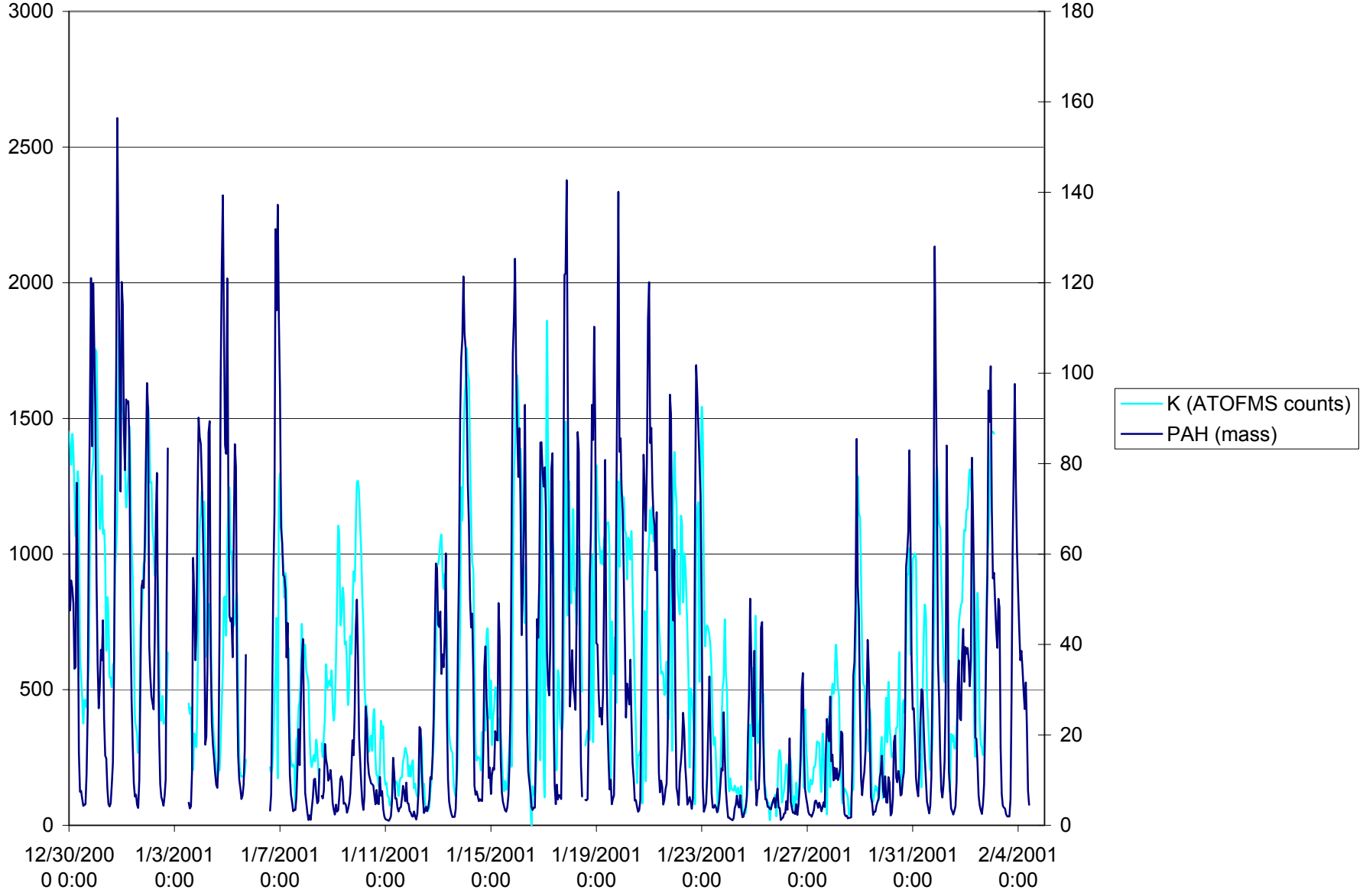


Figure 6: Temporal evolution of ATOFMS counts for particles containing potassium sampled in Fresno, CA. The observed trends observed track those observed using a PAS an instrument that is also sensitive to aromatic species.

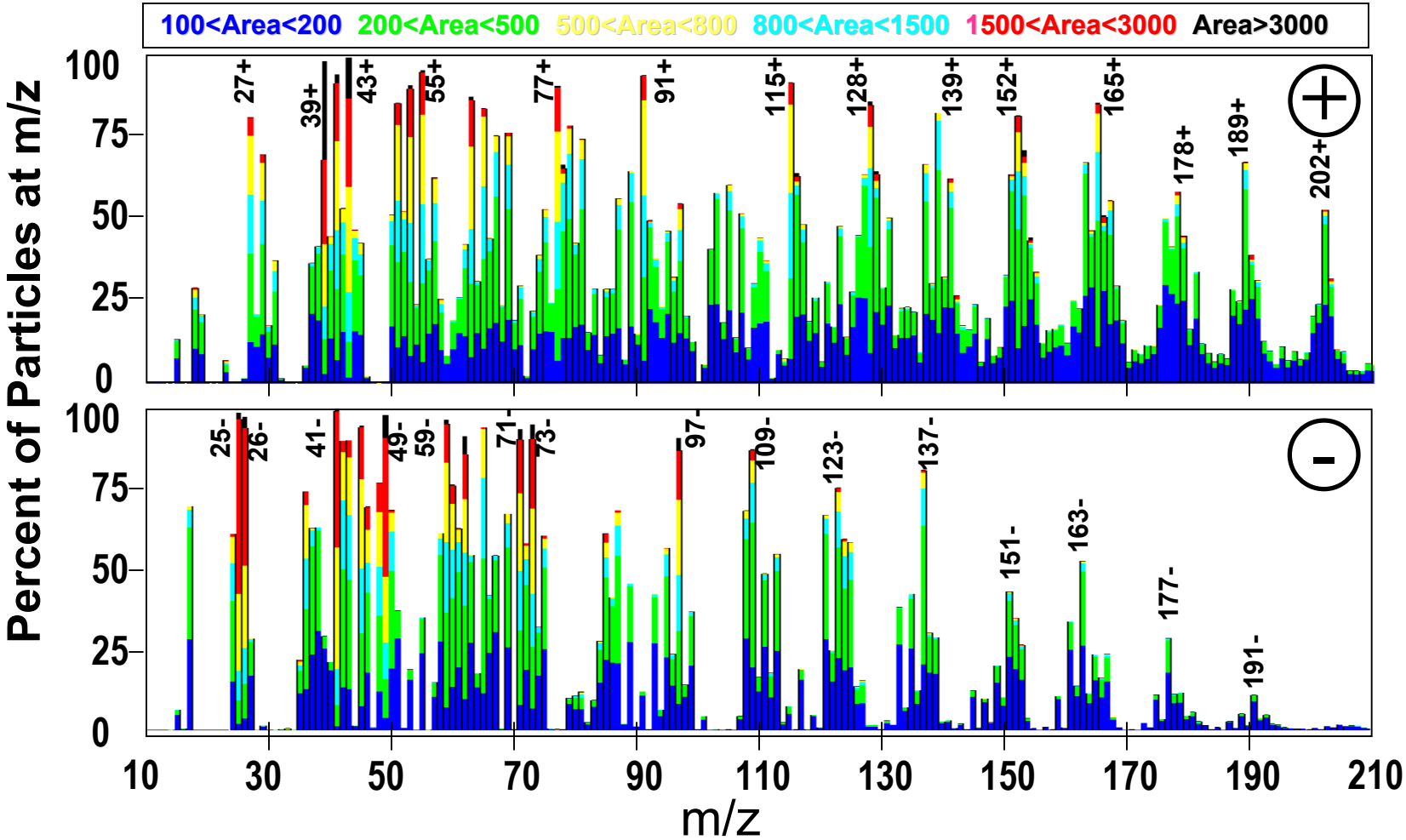


Figure 7: Positive and negative ion digital mass spectra of organic particles sampled in Fresno, CA.

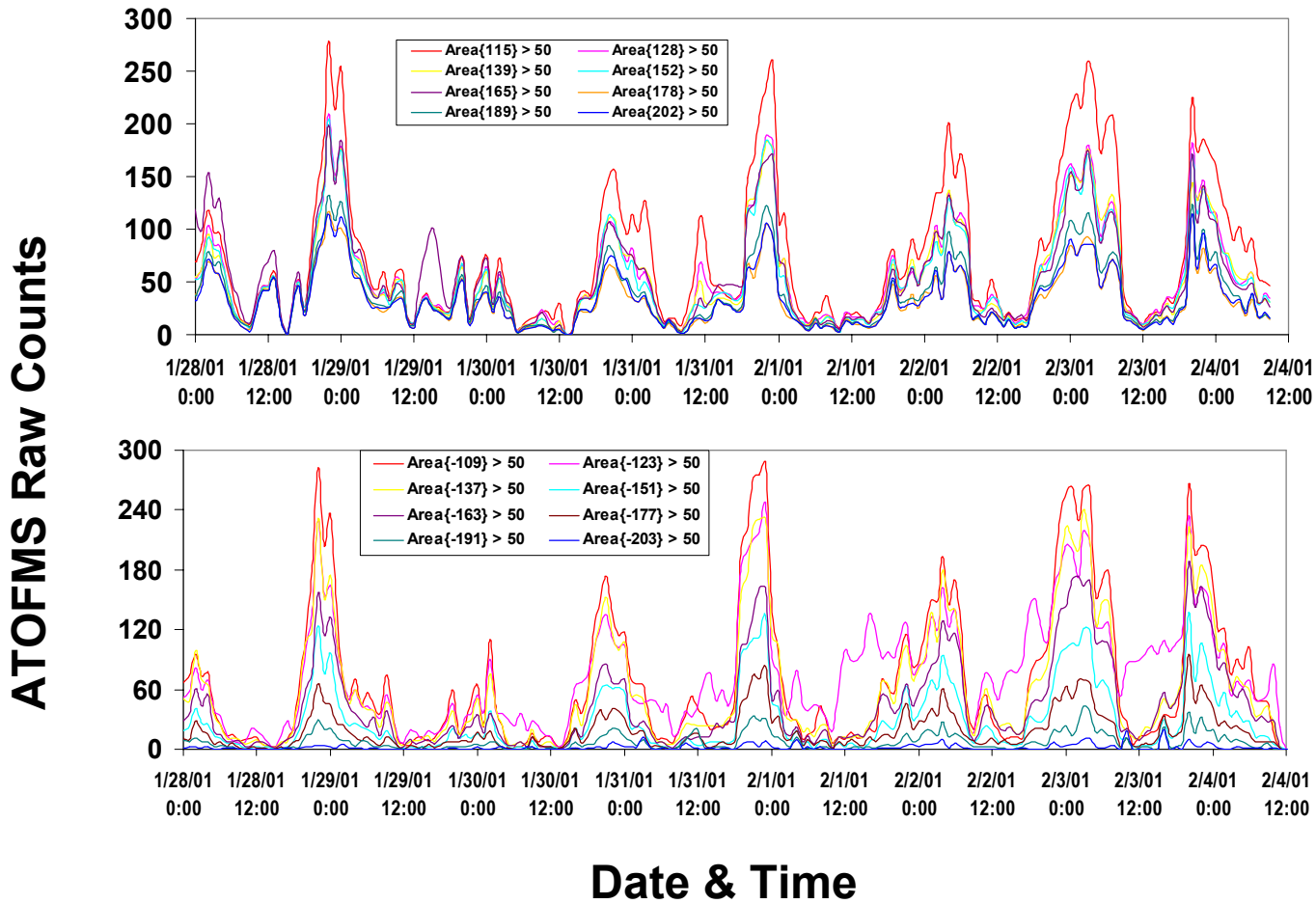


Figure 8: Temporal evolution of ATOFMS counts for particles containing aromatic SVOC species in Fresno, CA.

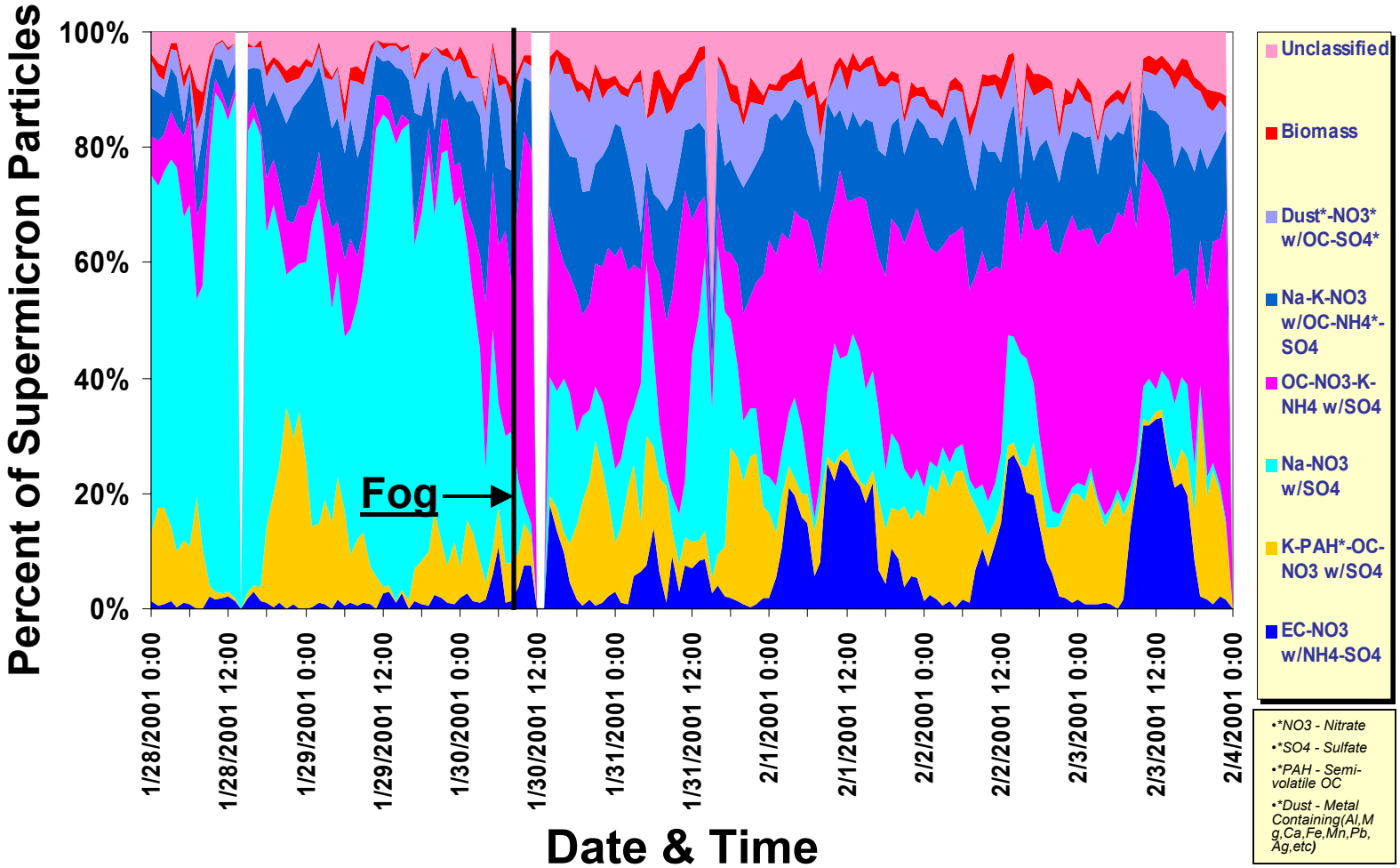


Figure 9: Temporal evolution of ATOFMS number fractions of different particle types in the super-micrometer mode including dust, biomass, K-rich particles, sea salt and OC. Readily apparent is the rapid change in composition due to the fog event on Jan. 30.

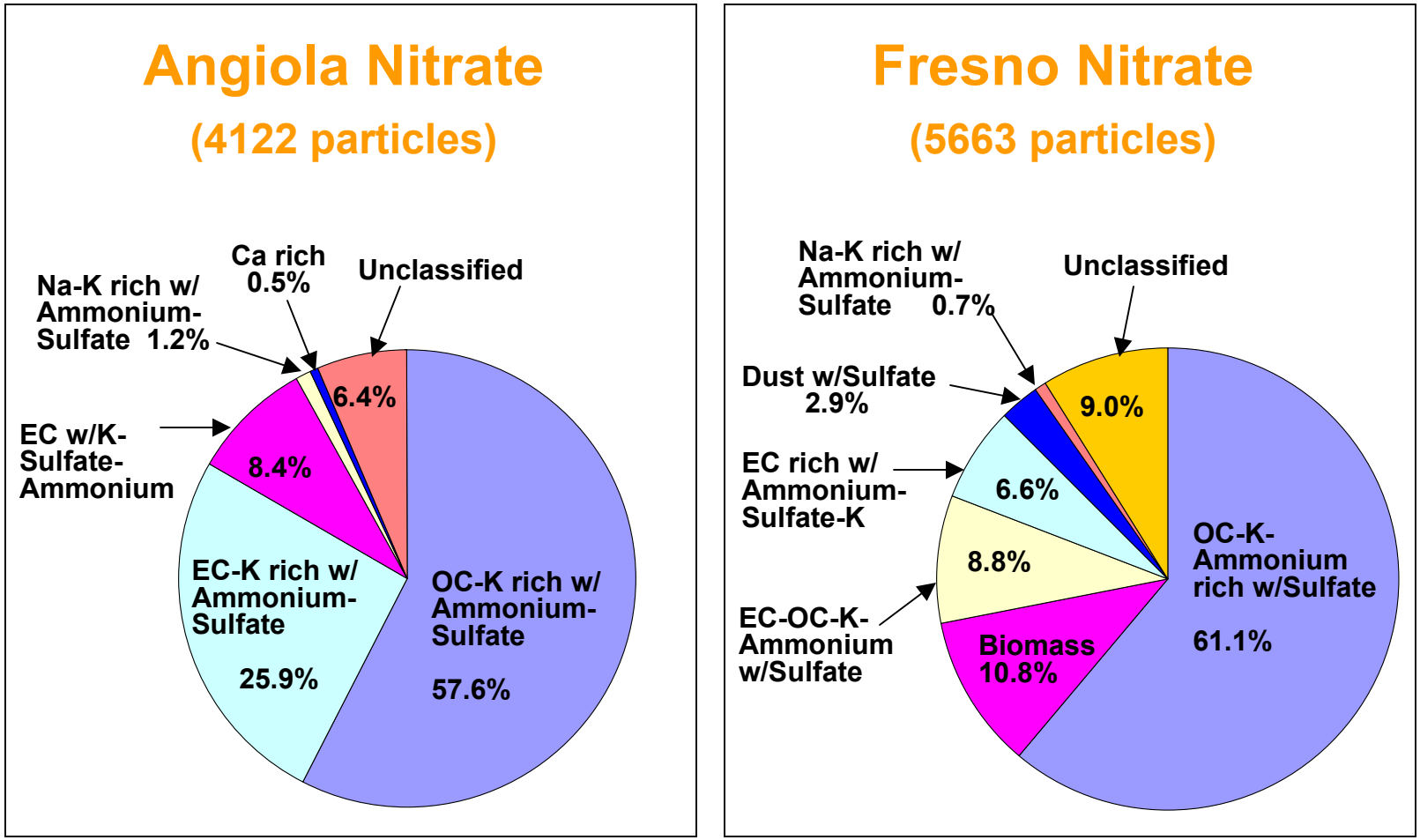
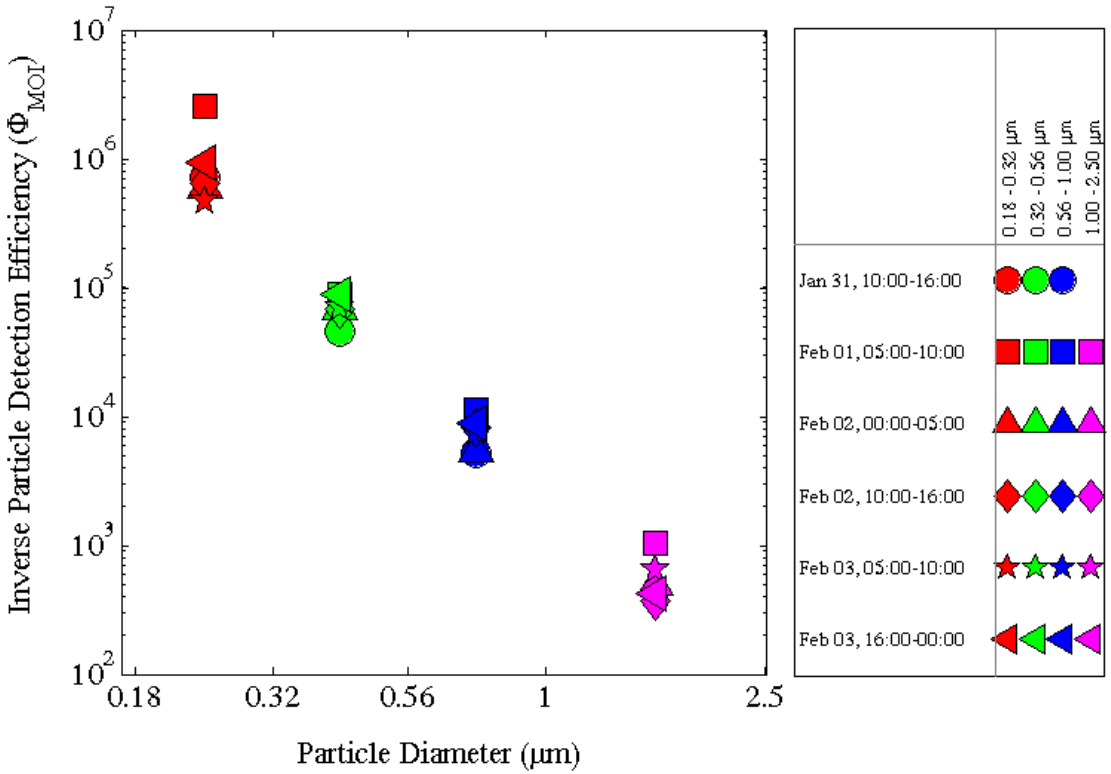


Figure 10: Associations between nitrate and specific particle types observed in Fresno and Angiola, CA during a fog event in CRPAQS.

Inverse Particle Detection Efficiency (?) vs. Particle Diameter



- **ATOFMS data is compared with MOUDI measurement for particle size between 0.18-1.8um**
- **ATOFMS inverse particle detection efficiency (?) is size dependant It follows a power law relationship with Da:**

$$\Phi = a D_a^{\beta}$$

- **For CRPAQS Fresno study, our initial a and ß estimations are:**

a: 2406.33 ± 614.508

ß: -4.2889 ± 0.3414

Figure 11: Scaling curve derived upon comparison of the ATOFMS data with MOUDI data collected during 6 sampling periods.