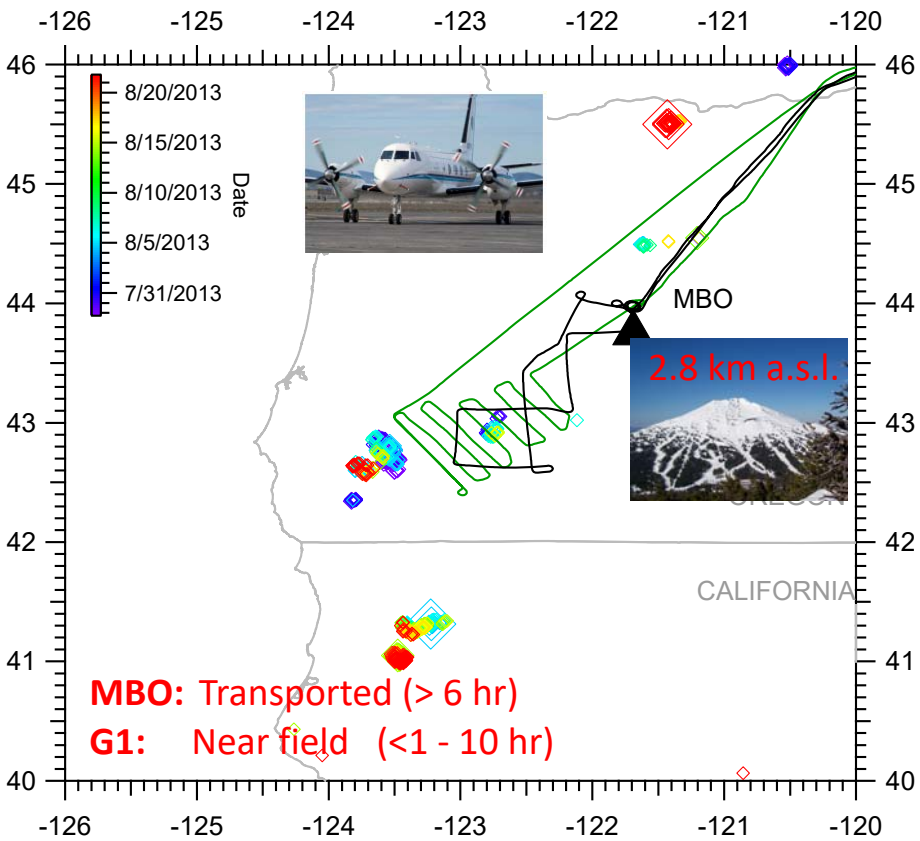
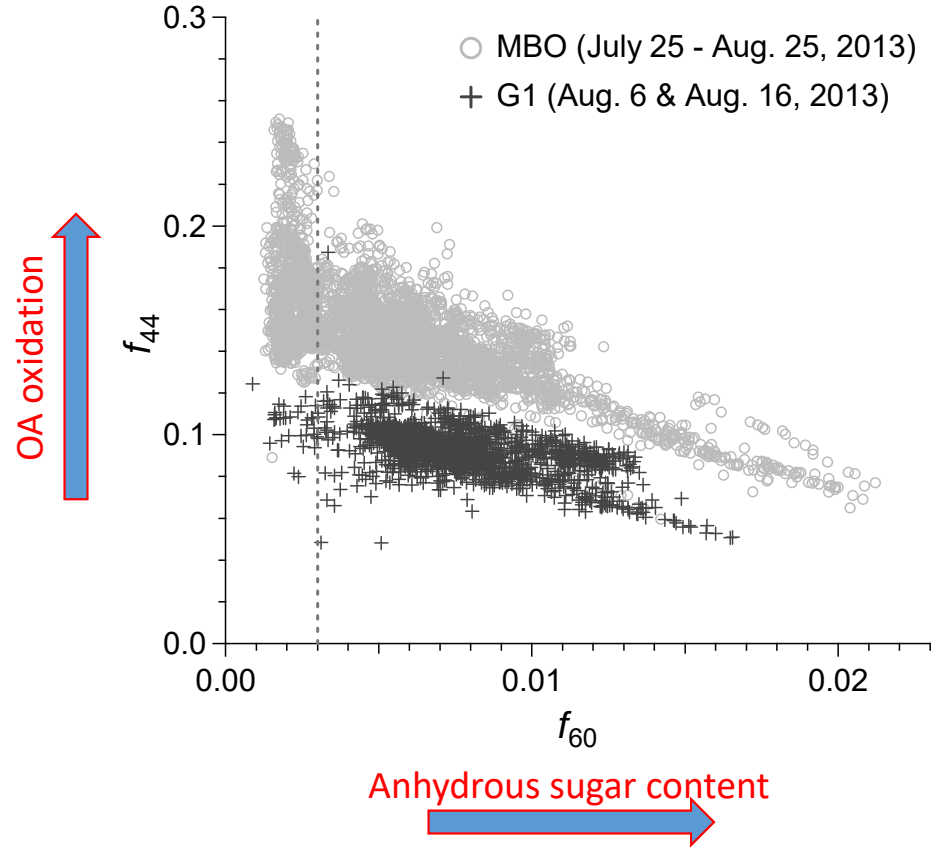
Formation and Aging of BBOA in Wildfire Emissions in the Western U.S.

Qi Zhang

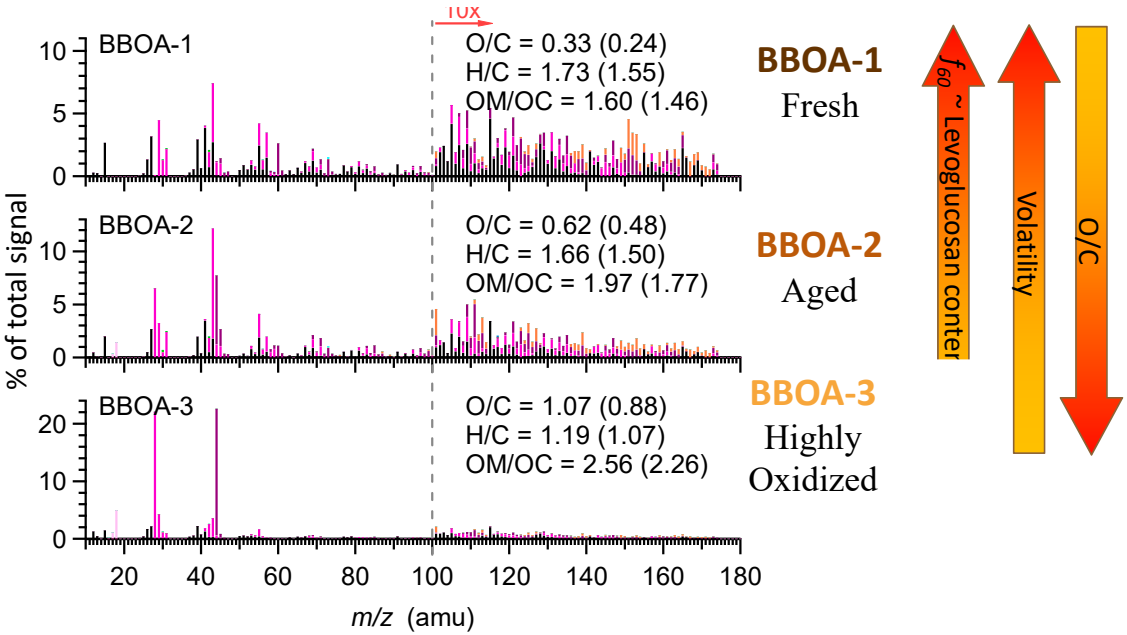
Biomass Burning Observation Project (BBOP): 7/25 – 8/25, 2013



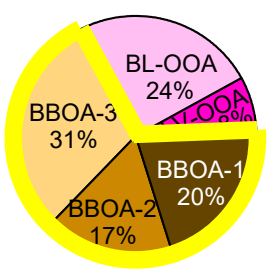


Fresh and Aged BBOAs in Western US During BBOP

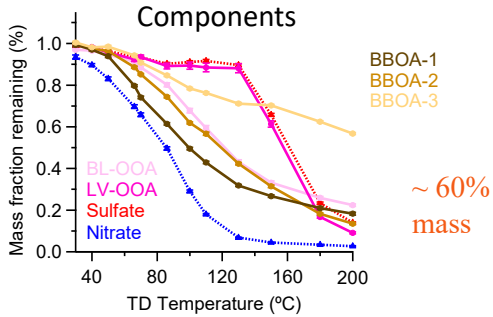
MBO, aged plumes (> 6 hours old)



Average OA composition



Thermal Profiles of Aerosol Components



~ 60% mass

Zhou et al., ACP, 2017

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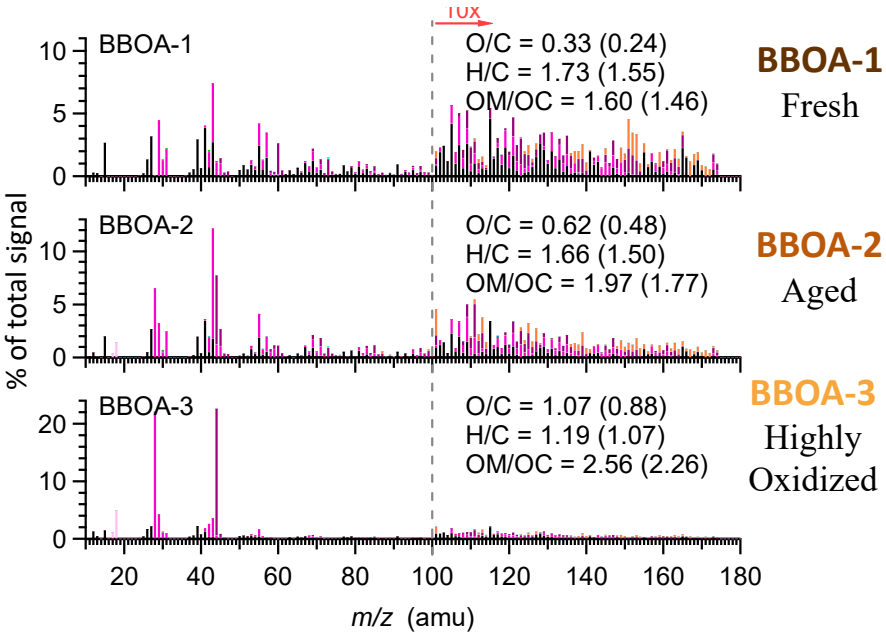
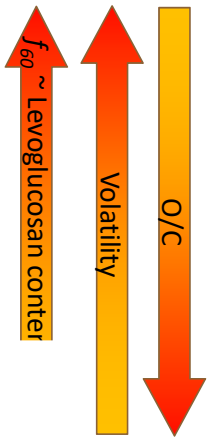


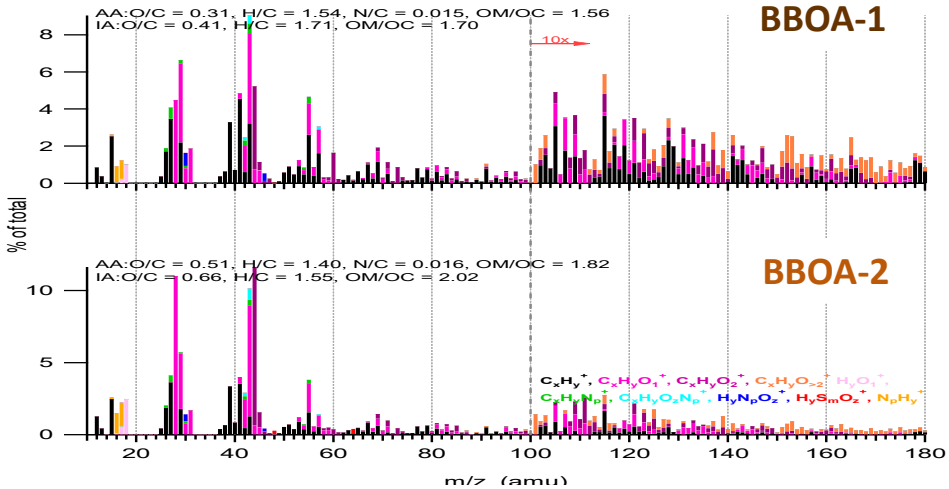
BBOA-1
Fresh

BBOA-2
Aged

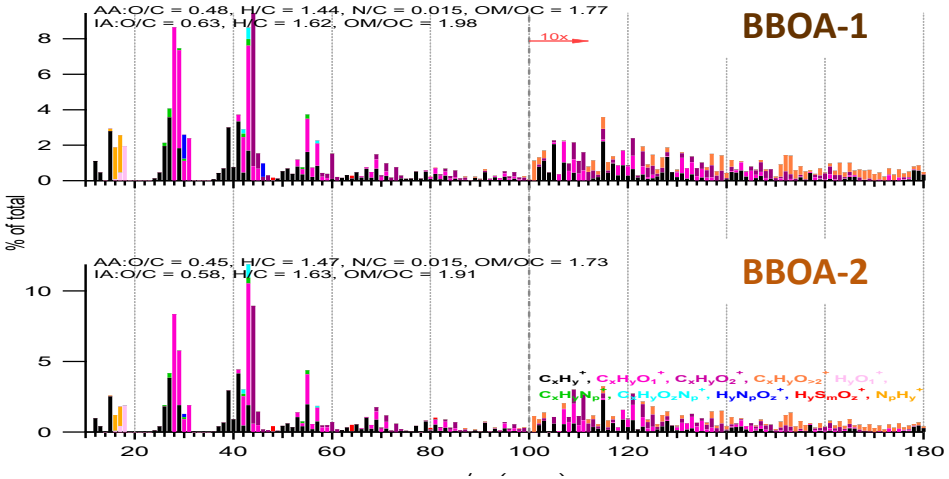
BBOA-3
Highly Oxidized



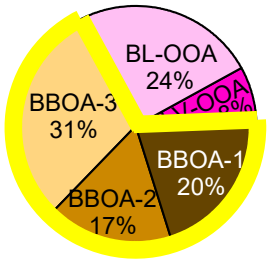
Aug. 6 flights, fresher plumes (< 1 hr – 6 hr)



Aug. 16 flights, fresher + moderately aged plumes (4 - 10 hr)



Average OA composition



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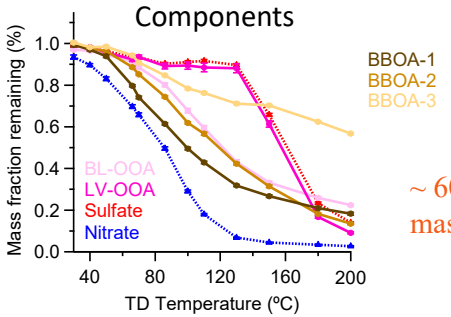

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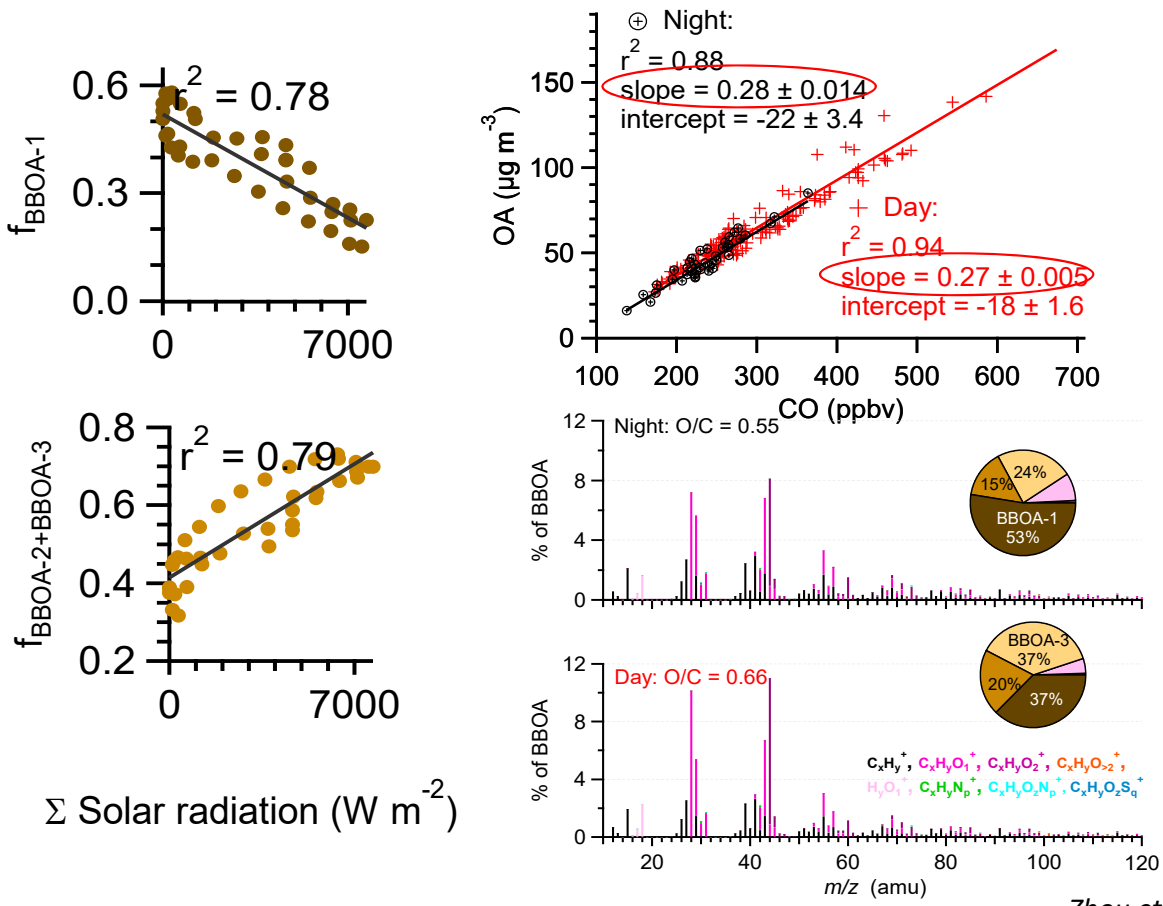
Zhou et al., ACP, 2017

Photochemical Aging of BBOA



Zhou et al., ACP, 2017

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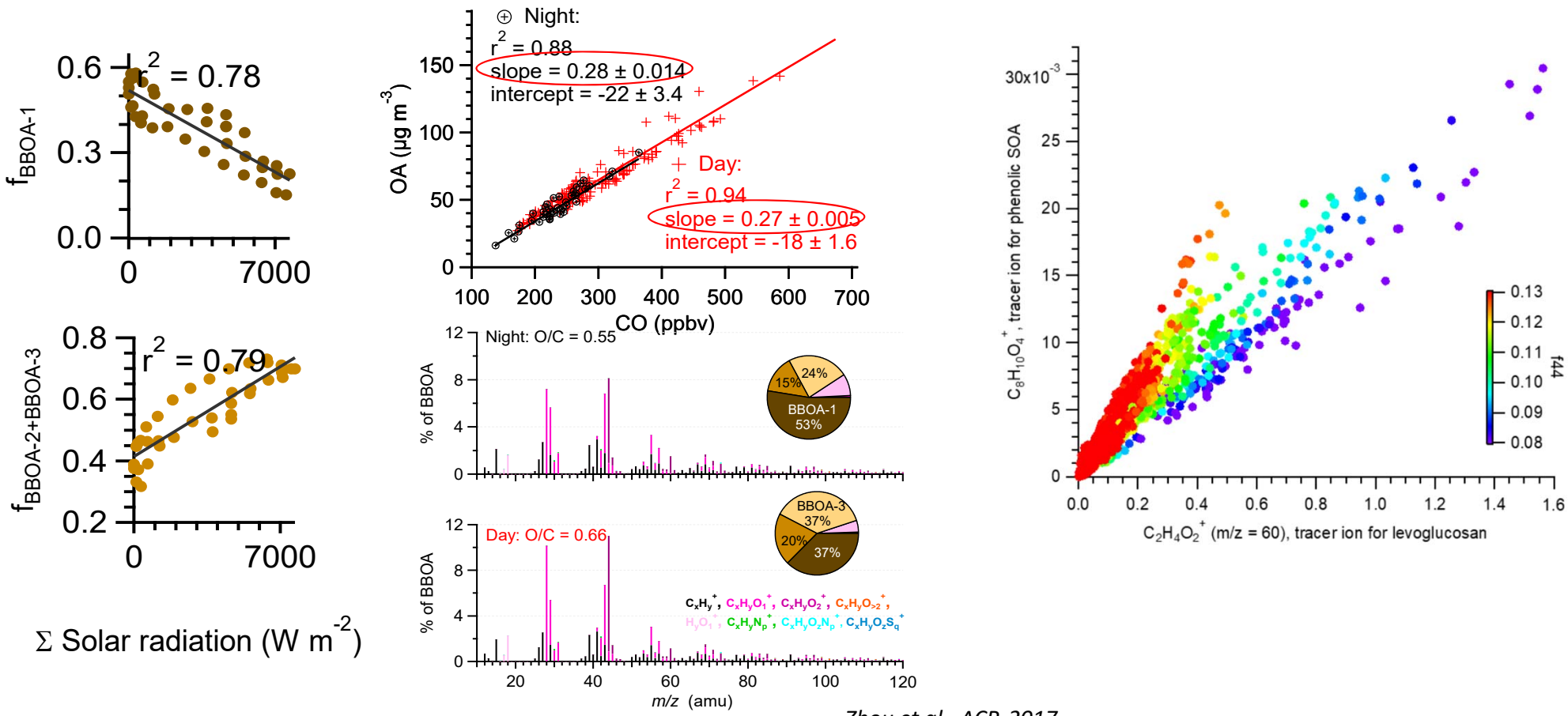
- BBOA is chemically transformed, likely due to oxidative processing followed by fragmentation and volatilization

Photochemical Aging of BBOA



Zhou et al., ACP, 2017

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