Deborah J. Luecken, Physical Scientist, in EPA's National Exposure Research Laboratory

Computational Exposure Division
Mailing Address

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Area of Expertise: Research on photochemical mechanisms for application in regional and global air chemistry modeling. Analysis of production pathways for atmospheric oxidant species, reactants, and intermediates, and their temporal concentration distributions in atmospheric models. Analysis of the production and decay of hazardous air pollutants (HAPs). Development and implementation of new chemical mechanisms and incorporation into EPA's research and regulatory models.

Select Publications:

Pye, H., Luecken, D., Xu, L., Boyd, C., Ng, N.L., Baker, K., Ayres, B., Bash, J., Baumann, K., Carter, W., Edgerton, E., Fry, J., Hutzell, W., Schwede, D., Shepson, P., 2015. Modeling the current and future role of particulate organic nitrates in the southeastern United States, Environmental Sci. Tech., 49: 14195-14203.

Derwent, R.G., Kaduwela, A., Luecken, D., Carter, W., 2015. New Directions: Atmospheric Chemical Mechanisms for the Future. Atmospheric Environment, 122: 609-610.

Knote, C., Tuccella, P., Curci, G., Emmons, L., Orlando, J.J., Madronich, S., Baro, R., Jimenez-Guerrero, P., Luecken, D., Hogrefe, C., Forkel, R., Hirtl, M., Perez, J.L., San Jose, R., Giordano, L., Brunner, D., Yahya, K., Zhang, Y., 2014. Influence of the choice of gas-phase mechanism on predictions of key gaseous pollutants during the AQMEII phase-2 intercomparisons. *Atmospheric Environment*, 115: 553-568.

Pye, H.O.T., Pinder, R.W., Piletic, I.R., Xie,Y., Capps, S.L., Lin,Y-H., Surratt,J.D., Zhang, Z., Gold,A., Luecken, D.J., Hutzell, W.T., Jaoui,M., Offenberg, J.H., Kleindienst, T.E., Lewandowski,M., Edney, E.O., 2013. A significant source of isoprene aerosol controlled by acidity, *Environmental Science and Technology*, 47(19): 11056-11064.

Parikh, H.M., Jeffries, H.E., Sexton, K.G., Luecken, D.J., Kamens, R.M., Vizuete, W., 2013. Evaluation of aromatic oxidation reactions in seven chemical mechanisms against UNC outdoor chamber. *Environmental Chemistry*, 10, 245-259.

Lin, H-Y, Zhang, H, Pye, H.O.T., Zhang, Z., Marth, W.J., Park, S., Arashiro, M., Cui, T., Budisulistiorini, S.H., Sexton, K.G., Vizuete, W., Xie, Y., Luecken, D.J., Pilatec, I., Edney, E.O., Bartolotti, L.J., Gold, A., Surratt, J.D., 2013. Epoxide as a precursor to secondary organic aerosol formation from isoprene photooxidation in the presence of nitrogen oxides. *Proceedings of the National Academy of Sciences*, April 3, 2013.

View more research publications by Deborah Luecken.

Education:

- M.S. in Chemical Engineering, University of California, Los Angeles

Professional Experience:

Honors and Awards:

- EPA Scientific and Technical Achievement Awards: Level 1 (2012), Level III (2014, 2013, 2012, 2010)
- EPA Honor Award team (2011, 2010), Gold medal team (2014)
- NERL Leadership Award (2010)
- NERL Special Achievement Award (2010)