

John Streicher, Physical Scientist, in EPA's National Exposure Research Laboratory

Computational Exposure Division

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Area of Expertise: Developing models of solar irradiance, and integrating those models into applied problems in photobiology and photochemistry. Current photochemistry application is in the development of a comprehensive radiance model that will be used to calculate spectral actinic flux in the Community Multiscale Air Quality (CMAQ) modeling system. The radiance model will incorporate atmospheric, geodesic, and physiographic independent variables.

Recent photobiology applications have integrated radiative transfer models with 3-D graphic models of the human form to develop a comprehensive source-to-dose software platform to study the relationship of solar irradiance to skin cancers, cataract induction, and UV-induced immunosuppression. Photobiology applications with an ecological theme have included remote sensing image processing (also known as "atmospheric correction") of upwelling radiance to derive surface reflectance, which is used for surface materials identification.

Publications:

Hutzell, Bill, David-C Wong, F. Binkowski, J. Bash, AND J. Streicher. Updates to In-Line Calculation of Photolysis Rates. 2015 CMAS Workshop, Model Development Session, Chapel Hill, NC, October 05 - 07, 2015.

KNIGHT, J. F., R. S. LUNETTA, H. W. PAERL, J. J. STREICHER, B. L. PEIERIS, T. GALLO, J. G. LYON, AND T. H. MACE. PRESENTED: 09/20/04 REMOTE MEASUREMENT OF PHYTOPLANKTON PIGMENTS IN THE PAMLICO SOUND, NC USING HYPERSPECTRAL IMAGERY. Presented at International Geoscience and Remote Sensing Symposium, Anchorage, AK, September 20 - 24, 2004.

Knight, J F., R S. Lunetta, H. W. Paerl, J J. Streicher, B. L. Peierls, T. Gallo, J G. Lyon, AND T H. Mace. REMOTE MEASUREMENT OF PHYTOPLANKTON PIGMENTS IN THE PAMLICO SOUND, NC USING HYPERSPECTRAL IMAGERY. Presented at International Geosciences and Remote Sensing Symposium (IGARSS) 2004, Anchorage, AK, September 20-24, 2004.

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Education:

- B.S. in Physics, magna cum laude, 1980, University of Cincinnati
- M.S. in Micrometeorology, 1987, University of British Columbia
- Graduate Studies in Engineering, 1987-1988, Clemson University

Professional Experience:

- Physical Scientist, USEPA/ORD/NERL/AMAD/AMDB, Research Triangle Park, NC, 2008 – Present
- Physical Scientist, NOAA Atmospheric Sciences Modeling Division (in partnership with USEPA/NERL), Research Triangle Park, NC, 1993 – 2008
- Scientific Programmer, Computer Sciences Corporation, Durham, NC, 1991 – 1993
- Software Engineer, General Electric Corporation, Burlington, IA, 1988 – 1991
- Physical Scientist, U.S. Dept of Agriculture, Clemson, SC, 1987 – 1988
- Research Assistant, University of British Columbia, Vancouver, BC, 1983 – 1987
- Physical Scientist, McDonnell-Douglas Corporation, St. Louis, MO, 1980 - 1983