UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

Department of Oceanography

Presents

"Modeling marine aerosols – a lifetime job"

Professor Lex van Eijk (TNO, The Netherlands)

Atmospheric aerosols play an important role in climate studies, because they scatter and absorb (solar) radiation and thereby modify the radiative flux to the Earth's surface. In addition, aerosols play a role in cloud formation, which further impacts on the radiative flux. With 70% of the planet covered by oceans, marine or sea spray aerosols are the dominant species and therefore especially important for estimating the net flux. Unfortunately, the IPCC Panel has identified the aerosol effect as one of the least understood and quantified parameters in climate modeling, which explains a continued interest in the production and lifecycle of (sea spray) atmospheric aerosols.

The presentation will address the production mechanism of sea spray aerosols, and the coupling thereof with meteorological and oceanographic parameters. The development of aerosol models over the years will be reviewed, starting with empirical parametric models, and ending with the numerical chemical transport models that are utilized nowadays. Some of the challenges in present-day aerosol modelling will be discussed.

Prof. Dr. Alexander (Lex) Van Eijk received his Ph.D. from the University of Leyden (The Netherlands) in 1989. He is currently a senior scientist at TNO The Hague (The Netherlands), where he leads the efforts on Atmospheric Propagation in the department of Electronic Defence. He has authored/coauthored 25 refereed publications and more than 100 conference proceedings in physical chemistry, aerosol physics, atmospheric physics and atmospheric optics. He is a Fellow of the Society of Photographic Instrumentation Engineers (SPIE) and chaired multiple SPIE conferences in his area of expertise. Lex's research interests lie broadly in understanding and predicting the influence of the environment on sensor performance, with emphasis on the above-water environment and electro-optical sensors, including lasers. Since 2008, Lex holds the industrial chair of "atmospheric dynamics in the littoral" at the Ecole Centrale de Nantes (France), and since 2015 he consults the Signatorics Department of Fraunhofer IOSB (Germany) on Atmospheric Optics. Lex is also a member-at-large for "Atmospheric Optics" in the NATO Sensor and Electronics Technology Panel.