

Smarter Skies, More Resilient Systems: The Future of Commercial Aviation

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Gabriel G. Katul

George Pearsall Distinguished Professorship
Pratt School of Engineering, Duke University

Gabriel G. Katul received his B.E. degree in 1988 at the American University of Beirut (Beirut, Lebanon), his M.S. degree in 1990 at Oregon State University (Corvallis, OR) and his Ph.D degree in 1993 at the University of California in Davis (Davis, CA). He was a visiting fellow at University of Virginia (USA) in 1997, the Commonwealth Science and Industrial Research Organization (Australia) in 2002, the University of Helsinki (Finland) in 2009, the FulBright-Italy Distinguished Fellow at Politecnico di Torino (Italy) in 2010, the École polytechnique fédérale de Lausanne (Switzerland) in 2013, Nagoya University (Japan) in 2014, University of Helsinki (Finland) in 2017, the Karlsruhe Institute for Technology (Germany) in 2017, Princeton University (USA) in 2020, CzechGlobe (Brno - Czech Republic) in 2023, and University of Alabama (USA) in 2026.



He has received several honorary awards, including the inspirational teaching award by the students of the School of the Environment at Duke University in 1994 and 1996, the Macelwane medal and became thereafter a fellow of the American Geophysical Union (in 2002), the editor's citation for excellence in refereeing from the American Geophysical Union (in 2008), the Hydrologic Science Award from the American Geophysical Union (in 2012), the John Dalton medal from the European Geosciences Union (in 2018), the Outstanding Achievements in Biometeorology Award from the American Meteorological Society (in 2021), an elected fellow of the American Meteorological Society (in 2024), and the recipient of the American Meteorological Society Hydrologic Science medal (in 2025).

Katul was elected to the National Academy of Engineering (in 2023) for his contributions in eco-hydrology and environmental fluid mechanics. He served as the Secretary General for the Hydrologic Science Section at the American Geophysical Union (2006-2008). His research focuses on lower atmosphere turbulence, micro-meteorology and near-surface hydrology with emphasis on heat, momentum, carbon dioxide, water vapor, ozone, particulate matter (including aerosols, pollen, and seeds) and water transport in the soil-plant-atmosphere system as well as their implications to a plethora of hydrological, ecological, atmospheric and climate change related problems. He is also one of the founding editors of the Journal Academic Research Community (ARC) - Geophysical Research, a journal seeking to enable free publishing for authors and free access for readers.