Speakers for the Burgers Symposium, Wednesday, November 20th, 2019, Kay board rooms. Appear to have been reserved all day, 7 am to 7 pm.

Burgers Lecture – Jim Kok (Could not attend)
Dr.ir. J.B.W. Kok
University of Twente
Laboratory of Thermal Engineering
P.O. Box 217, 7500 AE Enschede
The Netherlands.
Tel. +31 53 4892582.
j.b.w.kok@utwente.nl

Burgers Lecture
Reynolds Number Scaling in Wall-Bounded Flows

Alexander J. Smits
Department of Mechanical and Aerospace Engineering
Princeton University

To attain a very large range of Reynolds numbers in the laboratory, it is convenient to use high-pressure air. We have made extensive use of this approach to study the behavior of full-developed pipe flow, turbulent boundary layers, and the wakes downstream of bodies-of-revolution. I will summarize some of the major results obtained for the scaling of pipe and boundary layer flows, including the scaling of the mean velocity profile, the streamwise turbulence intensity, and the spectra. I will also discuss some present and future directions of this research, which largely focus on high Reynolds number non-canonical flows.

James Wallace
Quadrant Analysis in Turbulence Research: History and Evolution

Quadrant analysis is a simple, but quite useful, turbulence data-processing technique that has been widely used, principally in the investigation of turbulent shear flows. This presentation traces the origins of the technique and reviews how it has been applied during the more than 40 years since it was conceived. Applications are highlighted that have expanded the technique beyond its original formulation.

Asa-Awuku, Akua
Associate Professor
Chemical and Biomolecular Engineering
4418 Stadium Drive Chemical and Nuclear Engineering Building (090)
asaawuku@umd.edu
3014058527

“The Microphysical Challenges of the Growth of an Atmospheric Cloud Droplet “

Abstract: Aerosols, or particles, emitted into the air have adverse effects for regional air quality and health. In addition, aerosols significantly impact earth’s climate and the hydrological cycle. They can directly reflect the amount of incoming solar radiation into space; by acting as cloud condensation nuclei (CCN), they can indirectly impact climate by affecting cloud albedo. Our current assessment of the interactions of aerosols and clouds is uncertain and parameters used to estimate cloud droplet formation in global climate models are not well constrained. Organic aerosols attribute much of the uncertainty in these estimates and are known to affect the ability of aerosol to form cloud droplets by modifying simple thermodynamic and water transport assumptions. Understanding the chemical, thermodynamic, and fluid properties that control the ability of particles to form droplets, CCN activity, and droplet growth are necessary for constraining impacts on the hydrological cycle and uncertainties from the aerosol indirect effect. In this presentation, we review recent work that highlights challenges and identify parameters that affect droplet growth. In addition we discuss the links between microphysical and global-scale cloud formation.

Christine M Hartzell hartzell@umd.edu
Assistant Professor
Aerospace Engineering
3178 Glenn L. Martin Hall, Building 088
301-405-4647

"Avalanches as Granular Flows and Applications in Microgravity"

.