



2018

BURGERS SYMPOSIUM

Conference Centre 'De Werelt' in Lunteren

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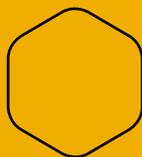
JUNE

2018

<http://www.jmburgerscentrum.nl>

The Burgers Symposium is a two-days meeting of the JM Burgers Centre (JMBC), and is the annual meeting platform for all (junior and senior) scientists of the JMBC.

The programme of the Symposium is attractive for all attendees, both junior and senior, both working on curiosity-driven and applied research projects, both numerically and theoretically oriented.



The Symposium programme includes:

- Burgers Lecture by Prof John Dabiri (Stanford University, USA))
- Evening Lecture by Prof Charles Meneveau (Johns Hopkins University, USA)
- A special session “100 Years of Fluid Mechanics in The Netherlands”
- Parallel sessions with approx. 80 oral presentations by junior scientists (mostly PhD students and postdocs affiliated with the Burgers Centre)
- Session of flash pitches by PhD students in their first / second year
- The JMBC Art Gallery of Fluid Motion: exposition of stunning movies and pictures of fluid-dynamical phenomena
- Award session of prizes:
 - Charles Hoogendoorn Fluid Dynamics Award (KIVI)
 - Young Scientist Awards for the two best presentations by junior scientists
 - Gallery Award for the most attractive entry of the Art Gallery of Fluid Motion
- Ample possibilities to meet colleagues and friends, during the coffee / tea breaks, lunches, the joint dinner, and the ‘evening session’ on the first day.

All JMBC members are invited to join in this annual meeting !
In particular we hope to welcome many (if not all) of the JMBC PhD students and postdocs.

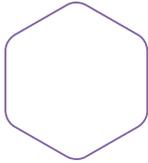
Registration for the Symposium and hotel reservations should preferably be done in a coordinated way per JMBC group. We have invited all the JMBC professors to coordinate the registrations, hotel reservations, junior-speaker suggestions for all the members of their group, in order to promote a coherent organisation.

Other interested persons (members of the Industrial Advisory Board, and other interested individuals, ...) should register individually via the JMBC website:

Registration : <http://www.jmburgerscentrum.nl>

We are looking forward to seeing you at the Burgers Symposium
in Lunteren on 5 & 6 June!

GertJan van Heijst
Ilse Hoekstein



BURGERS LECTURE

Prof John O Dabiri - Stanford University, USA



Biological Propulsion in (and of) the Ocean

The world's oceans are in constant motion, transporting the sun's heat from the equator to the poles, bringing marine life fresh supplies of oxygen and nutrients, and sequestering nearly half of our carbon dioxide emissions since the Industrial Revolution. Within this dynamic aquatic milieu exists another type of motion: the perpetual teeming of trillions of swimming animals. In this talk I will describe efforts over the past two decades to quantify the physical impacts of swimming organisms on the ocean, at scales ranging from individual animals to entire aggregations. These field and laboratory results indicate that some common behaviors such as diurnal vertical migrations can facilitate hydrodynamic interactions within the aggregations that lead to impacts on the flow, stratification, and tracer distributions at scales much larger than the swimming organisms. Several unanswered questions regarding the potential physical, chemical, and biological consequences of these observations will be explored.

EVENING LECTURE



Prof Charles Meneveau - Johns Hopkins University, USA

New analytical models for turbulence spectra and turbine wakes in wind farms

Reduced order, analytically tractable models remain an important tool in the wind energy area, both for design and control purposes. In this presentation we focus on two fluid mechanical themes relevant to wind farm design and control. The first topic deals with spectral characteristics of the fluctuations in power generated by an array of wind turbines in a wind farm. We show that modeling of the spatio-temporal structure of canonical turbulent boundary layers coupled with variants of the Kraichnan's random sweeping hypothesis can be used to develop analytical predictions of the frequency spectrum of power fluctuations of wind farms. In the second part we describe a simple (deterministic) dynamic wake model, its use for wind farm control, and its extension to the case of yawed wind turbines.



CHARLES HOOGENDOORN AWARD (KIVI)

Dr Sander Haase (former PhD student in the group Soft Matter, Fluidics and Interfaces, UT, now at AkzoNobel, Deventer)



This KIVI prize for the best PhD thesis in fluid dynamics defended in the Netherlands in the academic year 2016 – 2017 has been awarded to Dr.ir. Sander Haase for his PhD thesis: "Transport near slippery interfaces", defended (cum laude) on 4 November 2016 (supervisor: Prof R Lammertink).