
20. PAULI KOLLOQUIUM, jointly with Fak. Math. Koll.

The **Wolfgang Pauli Institut**, the FWF DoktoratsKolleg „Dissipation and Dispersion in Nonlinear PDEs“ and the FWF Spezialforschungsbereich “Taming Complexity in PDE Systems” kindly invite you to the “broad audience” talk of **Bill DORLAND**

Time: Thursday, 8. August 2019, 14:00 – 15:00

Place: „SkyLounge“, Fak.Math., Oskar-Morgensternplatz 1

1) **14h00 : “Introduction”** by **Alex Schekochihin** (Oxford)

2) **14h10 – 15h00 : William Dorland**
(U. Maryland) :

"Waves in Active, Turbulent Media"

Abstract: Problems in plasma physics turn up in multiple contexts, from astrophysics to industry to the quest for nuclear fusion. The incredibly hot plasmas of astrophysics and nuclear fusion are turbulent. They also support a huge variety of electromagnetic waves. The PDEs that describe these phenomena are interesting and enduring objects of study to both mathematicians and physicists. A few motivations and puzzles will be presented.



3) **15h00 - ... : “Coffee-tea & Cake-tarte”**

Norbert J Mauser
(director WPI)

Ansgar Jüngel
(speaker DK)

Ulisse Stefanelli
(speaker SFB)

Short Biography:

William Dorland received his doctorate (astrophysical sciences) in 1993 from Princeton. In the same year, he also completed a Master's degree in public affairs from Princeton (international science policy), because he wasn't sure he would ever "make it" as a physicist. Upon graduating, he won a US Fusion Postdoctoral Fellowship and moved to the University of Texas, where he remained until 1997. In 1998, he accepted a position as a research scientist with the Laboratory for Plasma Research at the University of Maryland (UMD). In 2001, he became an associate professor in the physics department at Imperial College, London. From 2002 to the present, he has been a professor in the Department of Physics, back at UMD.

He has published 133 papers, mostly on collisionless plasma turbulence in the laboratory (in fusion devices) and in nature (in the solar wind and around supermassive black holes). Recently, he has begun to publish on certain problems in quantum information and quantum computation.

From 2002 until 2008, he was a member of the Center for Scientific Computation and Mathematical Modeling at UMD. From 2009 until 2016, he ran the UMD Honors College. At Maryland, he was named the Richard Ferrell Distinguished Faculty Fellow in 2008 and a Distinguished Scholar-Teacher in 2010. In 2013, he was named a Maryland Merrill Presidential Scholar for his work advising undergraduate physics research projects. Those undergraduate students have gone on to be graduate students at Princeton, Caltech, Berkeley, Cambridge, Stanford, Maryland, and more.

Dorland was named a Fellow of the APS in 2005. In 2009, President Obama awarded him the E. O. Lawrence medal for "scientific leadership in the development of comprehensive computer simulations of plasma turbulence, and his specific predictions, insights, and improved understanding of turbulent transport in magnetically-confined plasma experiments."

This talk is a highlight of the "12th Plasma Kinetic Working Group" at the WPI, organized by Alex Schekochihin (U. Oxford), Matthew Kunz (Princeton), Nuno Loureiro (MIT), Felix Parra (Oxford), under the umbrella of the WPI thematic Programme 2019/20 "[Models in Plasmas, Earth and Space Science](#)" (Organizers: PF Claude Bardos (ICP and U.Paris), Ludovic Ferrière (NHM Wien), PF Oliver Hahn (Obs. Nice), **Sabine Hittmeir** (U. Wien), Alex Schekochihin (Oxford), PF Edriss Titi (Cambridge))

see

<http://www-thphys.physics.ox.ac.uk/research/plasma/wpi/workshop2019.html>
