

**YORK UNIVERSITY  
DEPARTMENT OF EARTH AND SPACE SCIENCE AND  
ENGINEERING  
and  
CENTRE FOR RESEARCH IN EARTH AND SPACE SCIENCE  
S E M I N A R**

**Dr. Eberhard Gill  
Delft University of Technology**

**Delfi Space – Nanosatellite Engineering  
at the Delft University of Technology**

ABSTRACT

Delfi Space is a Nanosatellite Program established in 2007 at the Delft University of Technology. As part of this program, the first satellite, Delfi-C<sup>3</sup>, has been launched in 2008 which is operational since then. Delfi-C<sup>3</sup> is a triple-unit CubeSat which carries several highly innovative systems, such as a completely wireless Autonomous Sun Sensor. Its successor, Delfi-n3Xt, is an advanced CubeSat, one of the first CubeSats to carry a novel propulsion system which was successfully demonstrated in 2013-2014. The university is working currently on DelFFi, two CubeSats both equipped with a propulsion system to demonstrate formation flying with CubeSats from 2016 onwards as part of the QB50 mission. A long-term goal within Delfi Space is to implement OLFAR, a satellite swarm composed to nanosatellites to map, for the first time, the long-wavelength radiation originating from the dark ages of our universe. The presentation will introduce the building blocks of the program and its key characteristics, achievements and highlights. It will also address associated research, educational, technological, and programmatic opportunities and challenges.

BIOGRAPHY

Professor Gill holds a PhD in theoretical astrophysics from the Eberhard-Karls-University Tuebingen, Germany. From 1989 to 2006 he was a researcher at the German Aerospace Center (DLR) in the field of precise satellite orbit determination, autonomous navigation and spacecraft formation flying. He has developed a GPS-based onboard navigation system for the BIRD microsatellite. Dr. Gill has been Co-Investigator on several international missions, including Mars94-96, Mars-Express, Rosetta, Equator-S and Champ and acted as Principal Investigator on the PRISMA formation flying satellite mission. Since 2007, he holds the Chair of Space Systems Engineering at the Faculty of Aerospace Engineering of the Delft University of Technology where he is also the Chair of Space Systems Engineering and the Department Head of Space Engineering. An author over over 210 journal articles and 4 textbooks, Dr. Gill's research interests are spacecraft autonomy, formation flying, GNSS technology, Systems Engineering, and combined communication and navigation applications.



Refreshments will be served at 3:15 p.m. in Room 422 Petrie Science and Engineering Building.

**DATE: Monday, September 29, 2014**  
**TIME: 3:30 p.m.**  
**LOCATION: Room 422, Petrie Science and Engineering Building**