

# Halmstad Colloquium

Seminar, January 7, 2016, 15:30

School of Information Technology

## Computability Revisited

Jos Baeten, professor in Theory of Computing, University of Amsterdam.

Classical computability theory disregards runtime interaction completely. The strong Church-Turing thesis states that anything a computer can do can also be done by a Turing machine, given enough time and memory. This thesis is invalidated by e.g. a self-driving car, as all possibly crossing pedestrians cannot be put on the Turing tape before starting, and resulting actions cannot be postponed until after finishing. Concurrency theory gives us a proper treatment of interaction. The talk surveys what happens when computability theory is integrated with concurrency theory, which theorems remain valid and which theorems should be adapted. The Reactive Turing Machine is introduced as a model of computability with interaction.



Jos Baeten has a Ph.D. in mathematics of the University of Minnesota (1985). From 1991 to 2015, he was professor of computer science at the Technische Universiteit Eindhoven (TU/e). In addition, from 2010 to 2012 he was professor of Systems Engineering at TU/e. As of October 1, 2011, he is general director of CWI in Amsterdam, the Netherlands research institute for mathematics and computer science. Since January 1, 2015, he is part-time professor in Theory of Computing at the Institute of Logic, Language and Computation of the University of Amsterdam.

He is well-known as a researcher in model-based engineering, in particular in process algebra. To date, he supervised 29 Ph.D. degrees.

He chairs the CONCUR conferences steering committee and is member of the Koninklijke Hollandsche Maatschappij der Wetenschappen (Royal Holland Society of Sciences and Humanities).

Wigforssalen, Visionen, 15:30 January 7, 2016  
Welcome!

The Halmstad Colloquium is a distinguished speaker series. The prominent speakers are invited from universities around the world to talk about topics of interest for the researchers within our research environment Halmstad Embedded and Intelligent systems research. The Halmstad Colloquium is hosted by the School of Information Technology.

