# SFB 1053 MAKI

## Distinguished Lecture Series
## Winter 2015

TECHNISCHE UNIVERSITÄT DARMSTADT

www.maki.tu-darmstadt.de

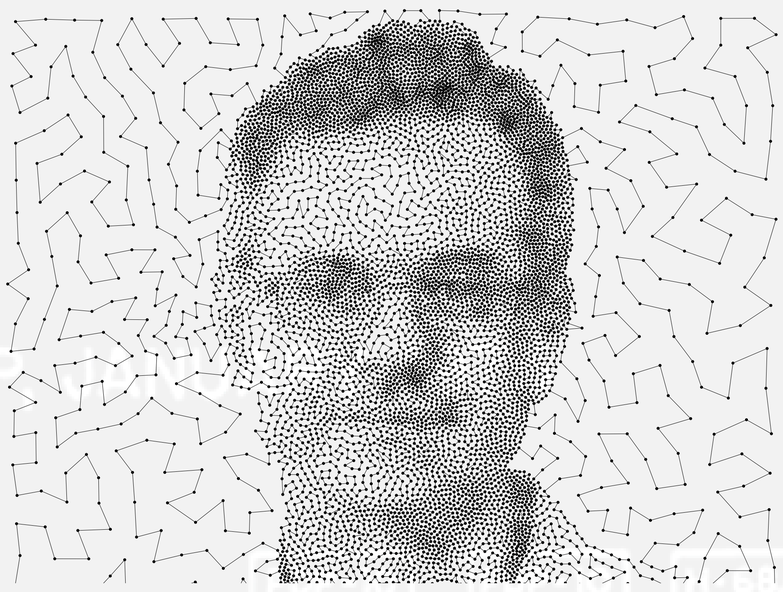
**Bringing leading researchers to TU Darmstadt to promote the exchange of thoughts and ideas between the speakers, students, faculty and the public on the latest advances in the area of networked communication systems and the future Internet**


Fernando Pedone

University of Lugano (USI), Switzerland


November 4, 2015
S3-20/111 16:15h

Please note the change in time and room for this lecture!



# Geo-replicated storage with scalable deferred update replication


## Abstract

Many current online services are deployed over geographically distributed sites (i.e., data-centers). Such services call for geo-replicated storage, that is, storage distributed and replicated among many sites. Geographical distribution and replication can improve locality and availability of a service. Locality is achieved by moving data closer to the users. High availability is attained by replicating data in multiple servers and sites.

In this talk I will consider a class of highly available storage systems based on deferred update replication. Deferred update replication ensures strong consistency and is at the core of several highly available storage systems. I will first show how the performance of deferred update replication can be made to scale to dozens and potentially hundreds of nodes. I will then consider the implications of the approach on user-perceived latency in geographically distributed environments and propose solutions.


## Speaker

Fernando Pedone is a full professor at the Faculty of Informatics at the University of Lugano (USI), Switzerland, and one of the faculty's "founding members". He received the Ph.D. degree from Ecole Polytechnique Federale de Lausanne (EPFL) in 1999 and has been previously affiliated with Cornell University, USA, as a visiting professor, and Hewlett-Packard Laboratories (HP Labs), USA, as a researcher.

Fernando Pedone's research interests include the theory and practice of dependable distributed systems and dependable data management systems. He has authored more than 100 scientific papers and holds 6 patents. He co-chaired the Monte Verita seminar "A 30-year perspective on replication", which resulted in the book "Replication: theory and practice", Springer 2010.

For further information please contact: DLS@maki.tu-darmstadt.de

Image source: <http://www.computerhistory.org/internet_history/> logical map of the ARPA network some 40 years ago (January 1975).