UNIVERSITÄT SALZBURG

**Fachbereich Mathematik**
Hellbrunnerstraße 34
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# Mathematisches Kolloquium

Donnerstag, 31. Oktober 2013
15.15 Uhr
Seminarraum II

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## A new approach to the analysis of random digital search trees and applications

Abstract

Digital search trees are fundamental data structures in computer science. Consequently, their probabilistic analysis has attracted a lot of attention over the last three decades. While the analysis of the mean of shape parameters is by now standard, analyzing the variance has turned out be very challenging and previous analyses were long and messy. In a joint paper with H.-K. Hwang (Academia Sinica, Taipei) and V. Zacharovas (Vilnius University, Vilnius), we introduced a new approach which simplifies the analysis and gives much simpler expressions for involved constants and periodic funtions. In this talk, we will give a brief introduction into this method. Moreover, we will demonstrate the usefuleness of the method by applying it to the analysis of various shape parameters in digital search trees as well as related algorithms, e.g., approximate counting.

Die Organisatoren: Clemens Fuchs, Peter Hellekalek, Reinhard Wolf
http://fuchsc.sbg.ac.at/smc.html