

Contact

TU Bergakademie Freiberg
Institut für Informatik
Prof. Dr.-Ing. habil. B. Steinbach
Bernhard-von-Cotta Str. 2
09596 Freiberg
Germany
Phone: +49 3731/39-2568
Fax: +49 3731/39-2298
E-Mail: steinb@informatik.tu-freiberg.de
iwsbp2010@informatik.tu-freiberg.de

Please register for the workshop by September 1, 2010 by registration system at http://www.informatik.tu-freiberg.de/prof2/ws_bp9/

The **conference office** is located in Bernhard-von-Cotta Str. 2 and will be open from 8:00, Thursday, September 16, 2010.

The workshop fee is 25 €. The fee includes admission to all sessions, one copy of the proceedings, an excursion and the workshop dinner on Thursday without drinks.

We ask you to **pay** the workshop fee by electronic money transfer to

Hauptkasse Sachsen
Account-No.: 315 301 1370
BLZ: 850 503 00
Code: 7040/00227-6 BP
IBAN: DE82 8505 0300 3153 0113 70
BIC: OSDDDE81

Alternatively, you can pay cash on-site at the first day of the workshop.

For a **room**, please contact Tourist-Information Freiberg directly as soon as possible using reservation form.

Hotel/Private Home Room Reservation:

Stadtmarketing Freiberg GmbH
Schlossplatz 6
D-09599 Freiberg
Tel. +49 3731 / 419 51-62
Fax: +49 3731 / 419 51-65
e-mail: k.thier@freiberg-service.de

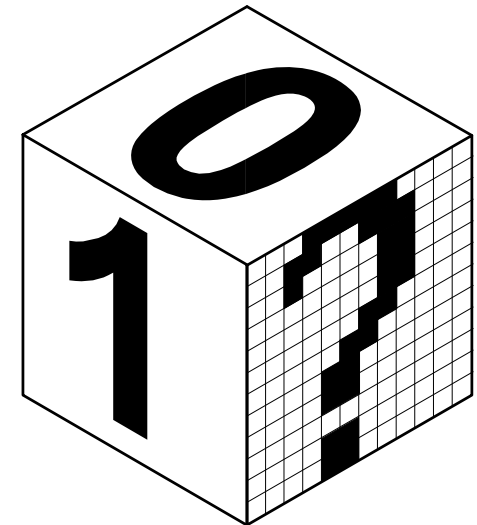
More Information:

http://www.informatik.tu-freiberg.de/prof2/ws_bp9/



Freiberg University
of Mining and Technology

9th International Workshop on Boolean Problems



September 16-17, 2010,
Freiberg (Sachsen)

The workshop on Boolean problems has an emphasis on the problems related to the solution of all kinds of high-dimension Boolean and discrete problems, and provides a forum for researchers and engineers from different disciplines to exchange ideas. The workshop is devoted to theoretical discoveries as well as practical applications. An aim of the workshop is to initiate possible collaborative research and to find new areas of application. It is intended to publish the papers in proceedings. The invited speakers Jon T. Butler (Naval Postgraduate School, Monterey, USA) and Shin-ichi Minato (Hokkaido University, Japan) are presenting essential results of their research.

Topics of Interest

Reverse and Quantum Logic
Logic Equations, SAT and Classifications
Data Structures and Algorithms
Decision Diagram
Logic Design

General Chair

Prof. Dr.-Ing. habil. B. Steinbach
Freiberg University of Mining and Technology
Institute of Computer Science
e-mail: steinb@informatik.tu-freiberg.de

Program Committee

L. Cheremisinova, Academy of Science, Belarus
D. Debnath, Oakland University, USA
R. Drechsler, University of Bremen, Germany
G. Dueck, University of New Brunswick, Canada
D. Große, University of Bremen, Germany
I. Levin, Tel Aviv University, Israel
M. A. Perkowski, Portland State University, USA
T. Sasao, Kyushu Institute of Technology, Japan
Ch. Scholl, University of Freiburg, Germany
R. Stanković, University of Nis, Serbia
B. Steinbach, University of Freiburg, Germany
R. Ubar, Tallinn Technical University, Estonia
M. Velev, Aries Design Automation, USA
A. De Vos, University of Gent, Belgium
S. Yanushkevich, University of Calgary, Canada
A. D. Zakrevskij, Academy of Science, Belarus

Organization

Dr.-Ing. G. Rudolf
Freiberg University of Mining and Technology
Institute of Computer Science
e-mail: Galina.Rudolf@informatik.tu-freiberg.de

Location of the Workshop

Bernhard-von-Cotta Str. 2, 09596 Freiberg
see marked place on the map

Program

Thursday, September 16

9:00-10:00 Invited Talk (Jon T. Butler)

Jon T. Butler (Naval Postgraduate School, Monterey, USA):
Bent Function Discovery by Reconfigurable Computer

10:15-11:30 Session 1

Radomir S. Stankovic (Dept. of Computer Science, Nis, Serbia),
Jaakko T. Astola and Helena Astola (Tampere University of
Technology, Finland):
Representations of Boolean Functions in Redundant Bases

Bernd Steinbach (Freiberg University, Germany), Christian
Posthoff(The University of The West Indies, Trinidad & Tobago):
New Results for Sets of Boolean Functions

Bernd Steinbach (Freiberg University, Germany), Christian
Posthoff(The University of The West Indies, Trinidad & Tobago):
New Results Based on Boolean Models

11:30-12:45 Lunch

12:45-14:40 Session 2

Michael D. Miller and Zahra Sasanian (University of Victoria,
Canada):
Improving the NCV Realization of Multiple Control Toffoli Gates

Hadi Hosseini and Gerhard W. Dueck (University of New
Brunswick, Canada):
Building Large Toffoli Gates: A Billiard Ball Model Approach

Michiel Boes, Alexis De Vos and Jan De Beule (Universiteit
Gent, Belgium):
Almost-Classical Quantum Computers

Pawel Kerntopf and Marek Szyprowski (Warsaw University of
Technology, Poland):
An Approach to Constructing Hard Reversible Functions

Marek Perkowski (Portland State University, USA), Sazzad
Hossain (University of Liberal Arts Bangladesh, Dhaka,
Bangladesh), Franklin Zhao (Portland State University, USA):
Minimal Graph Coloring using the Quantum Algorithm of Grover
and the Importance of the Quantum Composition/Layout
Problem in the Complete Design of Quantum Oracles

15:00-16:20 Session 3

Ilya Levin (Tel Aviv University, Israel), Osnat Keren (Bar Ilan
University, Israel):
Transforming FSMs for Synthesis by Fault Tolerant Nano-PLAs

Alexander Finder and Görschwin Fey (University of Bremen,
Germany):
Evaluating Debugging Algorithms from a Qualitative Perspective

Liudmila Cheremisinova (National Academy of Sciences,
Belarus):
VLSI Regular Structure Folding via Boolean Satisfiability

Liudmila Cheremisinova and Dmitry Novikov (National Academy
of Sciences, Belarus):
SAT based Implicative Method of Implementation Checking for
Incompletely Specified Boolean Functions

17:00 Excursion: World famous Terra Mineralia

19:30 Workshop Dinner

Friday, September 17

9:00-10:00 Invited Talk (Shin-ichi Minato)

Shin-ichi Minato (Hokkaido University, Japan):
Recent Topics on Decision Diagrams and Discrete Structure
Manipulation

10:15-11:55 Session 4

Rudolf Berghammer and Stefan Bolus (University Kiel,
Germany):
On the Use of Bdds for Solving Problems on Simple Games
Martin Lukac (Tohoku University, Japan), Marek Perkowski
(Portland State University, USA), Pawel Kerntopf (Warsaw
University of Technology, Poland) and Michitaka Kameyama
(Tohoku University, Japan):
GPU Acceleration Methods and Techniques for Quantum Logic
Synthesis

Eric Paul (Portland State University, USA), Bernd Steinbach
(Freiberg University, Germany) and Marek Perkowski (Portland
State University, USA):
Application of CUDA in the Boolean Domain for the Unate
Covering Problem

Arkadij Zakrevskij (National Academy of Sciences, Belarus):
Minimization of Partial Boolean Functions of Many Variables

11:55-13:00 Lunch

13:00-14:15 Session 5

Valentina Ciriani (Universita degli Studi di Milano, Italy), Anna
Bernasconi (Universita di Pisa, Italy):
SEPP: a New Compact Three Level Logic Form

Petr Fišer and Jan Schmidt (Czech Technical University in
Prague, Czech):
New Ways of Generating Large Realistic Benchmarks for
Testing Synthesis Tools

David Toman and Petr Fišer (Czech Technical University in
Prague, Czech):
A SOP Minimizer for Logic Functions Described by Many
Product Terms Based on Ternary Trees

14:45-16:20 Session 6

Edward Hryniewicz (Silesian University of Technology, Gliwice,
Poland):

Walsh Functions in Rectangular Wave Frequency Multiplication
Stanislav Stanković, Milena Stanković, Radomir S. Stanković
(Dept. of Computer Science, Nis, Serbia) and Jaakko Astola
(Tampere University of Technology, Finland):
Representation of Bent Functions Using Walsh Decision
Diagrams

Wolf-Michael Wendler (Ostfalia Fachhochschule, University of
Applied Sciences, Germany):
More on Complex Numbers in Finite Fields

Wolf-Michael Wendler (Ostfalia Fachhochschule, University of
Applied Sciences, Germany): Clifford Algebras in Finite Fields
and their Application to Dirac's Equation

Wolf-Michael Wendler (Ostfalia Fachhochschule, University of
Applied Sciences, Germany):
Algebraic, Geometric and Analytic Properties of Complex
Transcendental Functions in Finite Fields