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
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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
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e-mail: k.thier@freiberg-service.de

More Information:
http://www.informatik.tu-freiberg.de/prof2/ws_bp9/
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 Diagrams
- Logic Design

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**Organization**
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**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. Stanković (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
- Michel Boes, Alexis De Vos and Jan De Beule (Universiteit Gent, Belgium):  
  Almost-Classical Quantum Computers
- Pawel Kermpot and Marek Szywrowski (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
- Lidia Cheremisinova (National Academy of Sciences, Belarus):  
  VLSI Regular Structure Folding via Boolean Satisfaction
- 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 Kermpot (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
- Arkadz Zakrezvsky (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 (Università degli Studi di Milano, Italy), Anna Bernasconi (Università di Pisa, Italy):  
  SEPP: a New Compact Three Level Logic Form
- Petr Filler and Jan Schmidt (Czech Technical University in Prague, Czech):  
  New Ways of Generating Large Realistic Benchmarks for Testing Synthesis Tools
- David Toman and Petr Filler (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 Hrynkiewicz (Silesian University of Technology, Glówice, 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