2019 Reed-Muller Workshop

14th International Workshop on Applications of the Reed-Muller Expansion in Circuit Design

Fredericton, New Brunswick, Canada
May 24, 2019

Welcome to the 2019 Reed-Muller Workshop

It is our pleasure to welcome you to the 2019 Reed-Muller Workshop. This is the fourteenth workshop, earlier events having been held in Novi Sad (Serbia) in 2017, Waterloo (Canada) in 2015, Toyama (Japan) in 2013, Tuusula (Finland) in 2011, Naha (Japan) in 2009, Oslo (Norway) in 2007, Tokyo (Japan) in 2005, Trier (Germany) in 2003, Starkville, Mississippi (USA) in 2001, Victoria (Canada) in 1999, Oxford (UK) in 1997, Chiba (Japan) in 1995, and Hamburg (Germany) in 1993. The workshop is an opportunity to share new ideas and challenges in a variety of areas including but not limited to

- Graph-based representations of logic functions: BDD, MDD, BMD, EVBDD, etc.
- EXOR-based representations
- Emerging Technologies: quantum informatics, reversible computing, nano-technology, etc.
- Spectral representation of switching functions
- Graph functions, bent functions, and cryptographic applications
- Implementation in silicon (ASICs, FPLDs, FPGAs, ...)
- Applications of the Reed-Muller transform, including circuit design, processing, etc.
- Cryptographically-significant functions and other applications in cybersecurity

On behalf of all participants, we thank Prof. Vincent Gaudet, University of Waterloo, Canada and Prof. Tsutomu Sasao, Meiji University, Japan for their invited addresses. Their topics of stochastic computing and EXOR logic synthesis, respectively, demonstrate the breadth of topics covered by the workshop.

We thank all the authors of contributed papers and also thank our colleagues on the program committee for their expert reviews and suggestions that have contributed to the quality of the workshop.

Support from the Faculty of Computer Science, University of New Brunswick, Fredericton, NB, Canada and the Darwin Deason Institute for Cybersecurity, Southern Methodist University, Dallas, Texas, USA is gratefully acknowledged as is the assistance of Prof. Gerhard Dueck with local arrangements.

We hope you find the workshop interesting and that it leads to ongoing discussions and collaborations.

Yours sincerely,

Mitchell Thornton, Workshop Chair and *Luca Amaru* and *Michael Miller,* Program Co-chairs

RM2019 Program Committee:

2019 Reed-Muller Workshop

Program

May 24, 2019
Room 122, Gillin Hall
University of New Brunswick
Fredericton, New Brunswick, Canada

09:00 – 09:10 Registration

09:10 – 09:15 Opening Remarks – Mitchell A. Thornton, Workshop Chair

09:15 – 10:15 Invited Address

10:15 – 10:45 Nutrition Break

10:45 – 12:15 Session I

12:15 – 13:30 Lunch

13:30 – 14:30 Invited Address

14:30 – 15:30 Session II

15:30 – 16:00 Nutrition Break

16:00 – 16:30 Plenary Session

An open discussion regarding future Reed-Muller Workshops.

Other Contributions