Workshop Programme

(location: University Trier, Campus 2
building HZ, lecture hall HS13)

Monday, 2012-05-28

from 18:00   “Get Together” (at your own expense) at the restaurant

Weinstube Kesselstatt
Liebfrauenstraße 10, Trier
(www.weinstube-kesselstatt.de)

Tuesday, 2012-05-29

09:15 – 10:00  Registration
09:45 – 10:00  Welcome
10:00 – 11:00  Invited lecture
               Effective topology from the eyes of a logician  (Giovanni Sambin)
11:00 – 12:00  Session 1
               Uniform Polytime Computable Operators on Univariate Real Analytic Functions
               (Kawamura / Müller / Rösnick / Ziegler)
               Some steps into verification of exact real arithmetic  (Müller / Uhrhan)
12:00 – 13:30  Lunch
13:30 – 15:10  Session 2
               R.e.subsets of represented spaces  (Klaus Weihrauch)
               Memoization in higher types  (Ulrich Berger)
               Computation over algebraic structures and the Turing reduction  (Christine Gaßner)
               Representations of Curves and the Continuity Theorem  (Robert Rettinger)
15:10 – 15:40  Coffee Break
15:40 – 17:30  Session 3
               On the computability relative to non-constructive principles  (Takayuki Kihara)
               From Bolzano-Weierstrass to Arzelà-Ascoli  (Alexander P. Kreuzer)
               Domain Representations induced by Dyadic Subbases  (Hideki Tsuiki)
               Real Number Computation with a Calculus of Bottomed Sequences  (Kei Terayama / Hideki Tsuiki)
**Wednesday, 2012-05-30**

09:15 – 10:45  **Tutorial**  
Effective Brownian Motion I  (Willem Fouché)

10:45 – 11:15  **Coffee Break**

11:15 – 12:15  **Invited lecture**  
Representations for polynomial-time computability  (Akitoshi Kawamura)

12:15 – 14:00  **Lunch**

14:00 – 15:30  **Session 4 (regular talks)**  
Variations on a theme by Ishihara  (Hannes Diener)
Homotopy constructively  (Andrej Bauer)
When is the denial inequality an apartness relation?  (Josef Berger)

15:30 – 16:00  **Coffee Break**

16:00 – 17:20  **Session 5 (informal talks)**  
On the computability of fixed points  (Petrus Potgieter)
Cardinality vs dimension of convex sets  (Arno Pauly / Stephane LeRoux / Vasco Brattka)
From determinacy to Nash equilibrium  (Stephane LeRoux)

**Thursday, 2012-05-31**

09:15 – 10:45  **Tutorial**  
Effective Brownian Motion II  (Willem Fouché)

10:45 – 11:15  **Coffee Break**

11:15 – 12:15  **Invited lecture**  
A common framework for domains and complete metric spaces  (Matthew deBrecht)

12:15 – 14:00  **Lunch**

14:00 – 17:00  **Excursion: Toga-Tour through Trier**  
(guided tour, including visits of “Porta Nigra” and “Kaiserthermen”)

from 17:30  **Workshop-Dinner**  (at your own expense) at the restaurant

*Cum Vino*  
Weberbach 75, Trier  
([www.cumvino-trier.de](http://www.cumvino-trier.de))
Friday, 2012-06-01

09:15 – 10:45 Tutorial
   The proofs-as-programs paradigm in computable analysis   (Ulrich Berger)

10:45 – 11:15 Coffee Break

11:15 – 12:15 Invited lecture
   Descriptive set theory for computable analysis   (Victor Selivanov)

12:15 – 14:00 Lunch

14:00 – 16:00 Session 6
   Kolmogorov Complexity, Brownian motion and countable dense random sets   (Willem Fouché)
   Computability on structures and function spaces   (Oleg Kudinov)
   Collapse results for some probabilistic hierarchies   (Stanislav O. Speranski)
   Some decidable elementary theories of function spaces   (Vladislav Amstislavskii)

16:00 – 16:30 Coffee Break

16:30 – 17:00 Meeting of the project committee

Saturday, 2012-06-02 (dedicated to the 65th Birthday of Dieter Spreen)

09:15 – 10:30 Session 7
   Opening
   Reachability Analysis of Safety Critical Systems   (Margarita Korovina)
   On total representations   (Víctor Selivanov)

10:30 – 11:00 Coffee Break

11:00 – 12:00 Session 8
   Some conservative extension results of classical logic over intuitionistic logic   (Hajime Ishihara)
   Proofs by Induction   (Peter Schuster)

12:00 – 13:30 Lunch

13:30 – 14:30 Session 9
   Computation over algebraic structures and finitary domains   (Christine Gaßner)
   Interval domains and exact real arithmetic   (Jens Blanck)

14:30 – 15:00 Break

15:00 – 16:00 Session 10
   The uniform objects in constructive set theory   (Giovanni Curi)
   - to be announced -   (Helmut Schwichtenberg)

from 16:00 BBQ