

Contents

Memories, Complexity and Horizons

Cameo of a Consummate Computabilist.	3
<i>Robert Goldblatt</i>	
Surfing with Rod	9
<i>Michael R. Fellows</i>	
Prequel to the Cornell Computer Science Department	19
<i>Anil Nerode</i>	
Some Questions in Computable Mathematics	22
<i>Denis R. Hirschfeldt</i>	
Introduction to Autoreducibility and Mitoticity	56
<i>Christian Glaßer, Dung T. Nguyen, Alan L. Selman, and Maximilian Witek</i>	
The Complexity of Complexity.	79
<i>Eric Allender</i>	
Bounded Pushdown Dimension vs Lempel Ziv Information Density	95
<i>Pilar Albert, Elvira Mayordomo, and Philippe Moser</i>	
Complexity with Rod	115
<i>Lance Fortnow</i>	
On Being Rod's Graduate Student.	122
<i>Keng Meng Ng</i>	

Computable Combinatorics, Reverse Mathematics

Herrmann's Beautiful Theorem on Computable Partial Orderings	127
<i>Carl G. Jockusch Jr.</i>	
Effectiveness of Hindman's Theorem for Bounded Sums	134
<i>Damir D. Dzhabarov, Carl G. Jockusch Jr., Reed Solomon, and Linda Brown Westrick</i>	
Reverse Mathematics of Matroids	143
<i>Jeffrey L. Hirst and Carl Mummert</i>	
Weakly Represented Families in Reverse Mathematics.	160
<i>Rupert Hölzl, Dilip Raghavan, Frank Stephan, and Jing Zhang</i>	

The Vitali Covering Theorem in the Weihrauch Lattice	188
<i>Vasco Brattka, Guido Gherardi, Rupert Hölzl, and Arno Pauly</i>	

Parallel and Serial Jumps of Weak Weak König's Lemma	201
<i>Laurent Bienvenu and Rutger Kuyper</i>	

Computable Model Theory, Computable Algebra

Effectively Existentially-Atomic Structures	221
<i>Antonio Montalbán</i>	

Irreducibles and Primes in Computable Integral Domains	238
<i>Leigh Evron, Joseph R. Mileti, and Ethan Rattliff-Crain</i>	

Revisiting Uniform Computable Categoricity: For the Sixtieth Birthday of Prof. Rod Downey	254
<i>Russell Miller</i>	

Enumeration Reducibility and Computable Structure Theory.	271
<i>Alexandra A. Soskova and Mariya I. Soskova</i>	

Strength and Weakness in Computable Structure Theory	302
<i>Johanna N.Y. Franklin</i>	

On Constructive Nilpotent Groups.	324
<i>Nazif G. Khisamiev and Ivan V. Latkin</i>	

Computable Model Theory over the Reals	354
<i>Andrey S. Morozov</i>	

The Lattice of Computably Enumerable Vector Spaces	366
<i>Rumen D. Dimitrov and Valentina Harizanov</i>	

Injection Structures Specified by Finite State Transducers	394
<i>Sam Buss, Douglas Cenzer, Mia Minnes, and Jeffrey B. Remmel</i>	

A Survey on Universal Computably Enumerable Equivalence Relations.	418
<i>Uri Andrews, Serikzhan Badaev, and Andrea Sorbi</i>	

Higher Computability

Σ_1^1 in Every Real in a Σ_1^1 Class of Reals Is Σ_1^1	455
<i>Leo Harrington, Richard A. Shore, and Theodore A. Slaman</i>	

Turing Degree Theory, c.e. Sets

A Survey of Results on the d-c.e. and n-c.e. Degrees.	469
<i>Marat M. Arslanov and Iskander Sh. Kalimullin</i>	

There Are No Maximal d.c.e. <i>wtt</i> -degrees	479
<i>Guohua Wu and Mars M. Yamaleev</i>	
A Rigid Cone in the Truth-Table Degrees with Jump	487
<i>Bjørn Kjos-Hanssen</i>	
Asymptotic Density and the Theory of Computability: A Partial Survey.	501
<i>Carl G. Jockusch Jr. and Paul E. Schupp</i>	
On Splits of Computably Enumerable Sets	521
<i>Peter A. Cholak</i>	
1-Generic Degrees Bounding Minimal Degrees Revisited.	536
<i>C.T. Chong</i>	
Nondensity of Double Bubbles in the D.C.E. Degrees	547
<i>Uri Andrews, Rutger Kuyper, Steffen Lempp, Mariya I. Soskova, and Mars M. Yamaleev</i>	
On the Strongly Bounded Turing Degrees of the Computably Enumerable Sets	563
<i>Klaus Ambos-Spies</i>	
Permutations of the Integers Induce only the Trivial Automorphism of the Turing Degrees	599
<i>Bjørn Kjos-Hanssen</i>	
Algorithmic Randomness	
On the Reals Which Cannot Be Random	611
<i>Liang Yu and Yizheng Zhu</i>	
A Note on the Differences of Computably Enumerable Reals	623
<i>George Barmpalias and Andrew Lewis-Pye</i>	
Effective Bi-immunity and Randomness.	633
<i>Achilles A. Beros, Mushfeq Khan, and Bjørn Kjos-Hanssen</i>	
On Work of Barmpalias and Lewis-Pye: A Derivation on the D.C.E. Reals . . .	644
<i>Joseph S. Miller</i>	
Turing Degrees and Muchnik Degrees of Recursively Bounded DNR Functions.	660
<i>Stephen G. Simpson</i>	
Algorithmic Statistics: Forty Years Later	669
<i>Nikolay Vereshchagin and Alexander Shen</i>	

Lowness, Randomness, and Computable Analysis	738
<i>André Nies</i>	
Erratum to: There Are No Maximal d.c.e. <i>wtt</i> -degrees	E1
<i>Guohua Wu and Mars M. Yamaleev</i>	
Author Index	755

Computability and Complexity

Essays Dedicated to Rodney G. Downey on the
Occasion of His 60th Birthday

Day, A.; Fellows, M.; Greenberg, N.; Khoussainov, B.;
Melnikov, A.; Rosamond, F. (Eds.)

2017, XLII, 755 p. 22 illus., Softcover

ISBN: 978-3-319-50061-4