

# Rewriting

Lecture Notes Summer Semester 2011

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## Contents

1. Canonical reduction systems in symbolic mathematics
2. Equational theories
3. Reduction relations
4. String rewriting systems
5. Term rewriting systems

## Literature

- [Av95 ] J. Avenhaus, *Reduktionssysteme*, Springer-Verlag (1995)
- [BN98 ] F. Baader, T. Nipkow, *Term Rewriting and All That*, Cambridge Univ. Press (1998)
- [BO93 ] R.V. Book, F. Otto, *String-Rewriting Systems*, Springer-Verlag (1993)
- [DP01 ] N. Dershowitz, D.A. Plaisted, “Rewriting”, in A. Robinson, A. Voronkov (eds.), *Handbook of Automated Reasoning*, pp. 535–610, Elsevier Science Publ. (2001)
- [KB70 ] D.E. Knuth, P.B. Bendix, “Simple Word Problems in Universal Algebra”, in J. Leech (ed.), *Computational Problems in Abstract Algebra*, Pergamon Press (1970)
- [Wi89 ] F. Winkler, “Equational Theorem Proving and Rewrite Rule Systems”, in J. Retti, K. Leidlmaier (eds.), *Proc. 5. Österreichische Artificial-Intelligence-Tagung*, Springer-Verlag, Informatik Fachberichte 208 (1989)
- [Wi96 ] F. Winkler, *Polynomial Algorithms in Computer Algebra*, Springer-Verlag (1996)
- [Wi09 ] F. Winkler, “Canonical Reduction Systems in Symbolic Mathematics”, in S. Bozpalidis, G. Rahonis (eds.), *Proc. 3rd International Conference on Algebraic Informatics*, Springer-Verlag LNCS 5725 (2009)