R. Tichy: Decidability of Multiplicative Matrix Equations.

After a short survey on decidability of matrix equations some new results for multiplicative matrix equations over algebraic number fields are presented. In particular, special instances of the so-called knapsack problem are considered. The proofs are based on effective methods for Diophantine problems in finitely generated domains due to Evertse and Győry and to Corvaja and Zannier. The focus lies on explicit bounds for the size of the solutions in terms of heights as well as on the number of solutions. This approach also works for symmetric matrices which do not form a semigroup. Finally, some related counting problems are discussed.