1125-11-727 **Csanád Bertók*** (bertok.csanad@science.unideb.hu), Institute of Mathematics, Hajdú-Bihar megye, P.O. Box 400, Debrecen, 4002, Hungary, and **Attila Pethő** and **Michael E. Pohst**. *On multidimensional Diophantine approximation of algebraic numbers.*

In this talk we develop algorithms for solving the dual problems of approximating linear forms and of simultaneous approximation in number fields F. Using earlier ideas for computing independent units by Buchmann, Pethő and later Pohst we construct sequences of suitable modules in F and special elements β contained in them. The most important ingredient in our methods is the application of the LLL-reduction procedure to the bases of those modules. For LLL-reduced bases we derive improved bounds on the sizes of the basis elements. From those bounds it is quite straightforward to show that the sequence of coefficient vectors $(x_1, ..., x_n)$ of the presentation of β in the module basis becomes periodic. We can show that the approximations which we obtain are close to being optimal. Moreover, it is periodic on bases of real number fields. Thus our algorithm can be considered as a generalization, within the framework of number fields, of the continued fraction algorithm. (Received September 10, 2016)