On the Singularization of Multidimensional Continued Fraction Algorithms

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The techniques of *singularization* and *insertion*, as introduced by C. Kraaikamp 1991, allow to transform a multitude of semi-regular, one-dimensional continued fraction algorithms into other algorithms of the same class (the *class of S-expansions*). Apart from the classification, we may use this method to transfer statistical and approximation properties from the original to the resulting algorithm in an intuitive way.

During the last years, there have been several attempts to generalize the techniques into higher dimensions. In particular, we were able to show that the two-dimensional Jacobi-Perron Algorithm and the Brun Algorithm can be linked by methods similar to singularization (Schratzberger 2007a, 2007b).

We will review the technique of singularization, using examples from dimension one. Further, we will give an overview about the situation in dimension two, treating algorithms such as the Jacobi-Perron Algorithm, the Brun Algorithm, the Podsypanin Algorithm and the Selmer Algorithm.

KRAAIKAMP C. (1991) *A new class of continued fraction expansions.* Acta Arith. 57 (1991), 1-39

SCHRATZBERGER B. (2007a) *On the Singularization of the two-dimensional Jacobi-Perron Algorithm.* to appear in J. Experimental Math.

SCHRATZBERGER B. (2007b) *The two-dimensional Jacobi-Perron Algorithm and the Podsypanin Algorithm belong to the same class of S-expansions.* Preprint Universität Salzburg, submitted