

Euclidean algorithm over $\mathbb{F}_q[X]$ and its cost functions

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We introduce the notion of the “fine bit cost function” for Euclidean algorithm and discuss its main parameter. For this purpose, we define the mediant convergent map over formal Laurent power series and discuss the ergodic behavior of this map. Moreover, we try to extend this idea to higher dimensional case. For this reason, we introduce the mediant convergent map associated to non-Archimedean Jacobi-Perron algorithm.