

The first part of the thesis acquaints us with the Reed-Solomon codes, methods of their construction and encoding. At the same time we provide the evidence of their most important properties including the relevant theoretical basis. In the second chapter we introduce the theory of continued fractions over a field and examine their structure. Applying the executed general observations on the specific case of the formal Laurent series we get to efficient Reed-Solomon decoding algorithm. Without complete proofs we also mention other two decoding algorithms that are based on solving the key equation as well, namely Berlekamp-Massey and Euclidean algorithm. In the end we show the equivalence of these three algorithms.