

- whether to compute square roots in $\mathbb{GF}(2^m)$ – as well as in $\mathbb{GF}(2^m)[z]/g(z)$ – by an algorithm [5] or by table look up
- whether to transform to and from normal bases in order to profit from the simple arithmetic using normal bases

is more beneficial in terms of space and/or in terms of time. According to expectation, each alternative is easily implemented in SAGE.

If the blocks are not chained then block-wise data parallelism can be exploited. Linear feedback shift registers are suitable for the matrix operations. A (very) deep pipeline for the decoding algorithm will increase latency but speed up the decryption accordingly, i.e. proportional to the number of stages, given enough hardware to prevent structure hazards. Of course, the SAGE implementation cannot answer this type of design questions which are inherent to the target FPGA which puts the SAGEs help to implement the McEliece PKCS into perspective.

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