## On rational approximation of square-root parameterizable curves

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We study situations when non-rational parameterizations of planar or space curves as results of certain geometric operations or constructions are obtained. We focus especially on such cases in which one can identify a rational mapping which is a double cover of a rational curve. Hence, we deal with rational, elliptic or hyperelliptic curves that are birational to plane curves in the Weierstrass, cf. [1, 2] form and thus they are square-root parameterizable. We design a simple algorithm for computing an approximate (piecewise) rational parametrization using topological graphs of the Weierstrass curves. Predictable shapes reflecting a number of real roots of a univariate polynomial and a possibility to approximate easily the branches separately play a crucial role in the approximation algorithm. The designed approach is presented on several examples from planar or spatial geometry, cf. [3].

Joint work with: Michal Bizzarri, Jan Vršek.

## References

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