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Numerical implicitization of parametric hypersurfaces with linear algebra. (English)

Zbl 1042.65020

Campbell, John A. (ed.) et al., Artificial intelligence and symbolic computation. International conference AISC 2000, Madrid, Spain, July 17–19, 2000. Revised papers. Berlin: Springer (ISBN 3-540-42071-1). Lect. Notes Comput. Sci. 1930, 174-183 (2001).

Summary: We present a new method for implicitization of parametric curves, surfaces and hypersurfaces using essentially numerical linear algebra. The method is applicable for polynomial, rational as well as trigonometric parametric representations. The method can also handle monoparametric families of parametric curves, surfaces and hypersurfaces with a small additional amount of human interaction. We illustrate the method with a number of examples. The efficiency of the method compares well with the other available methods for implicitization.

For the entire collection see [[Zbl 0961.00030](#)].

MSC:

65D18 Numerical aspects of computer graphics, image analysis, and computational geometry

65F99 Numerical linear algebra

Cited in **21** Documents

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