

ZMATH 2010b.00512

Sjödin, Tord

The Gram-Schmidt algorithm for a general angle. (Gram-Schmidt's algoritm för en allmän vinkel.)

Normat. 57, No. 4, 173-179 (2009).

Summary: The classical Gram-Schmidt algorithm allows you to exhibit an orthogonal basis with respect to a positive definite form (the normalization that each basis element has length one is of course trivial). In this paper the question is posed whether it also works when orthogonality is replaced with some other angle θ . The author shows that it is possible if and only if $-\frac{1}{n-1} < \cos \theta < 1$ where n is the dimension of the space.

Classification: H65

Keywords: linear algebra; orthogonalization; generalization