Sudut antara dua subruang dari suatu ruang hasil kali dalam-n = Angle between two subspaces of an n-inner product space

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Abstrak

[ABSTRAK
Dalam tesis ini diperkenalkan ruang hasil kali dalam-n dan ruang norm-n
sebagai perluasan dari ruang hasil kali dalam dan ruang norm. Setiap ruang hasil
kali dalam dapat dilengkapi dengan suatu hasil kali dalam-n sederhana
hx0;x1jx2; ;xni =

hx0;x1i hx0;x2i hx0;xni
hx2;x1i hx2;x2i hx2;xni .
..
...
. . . ...
hxn;x1i hxn;x2i hxn;xni

:
Hasil kali dalam-n sederhana ini menginduksi suatu norm-n standar
kx1; ;xnk =phx1;x1jx2; ;xni;
yang tak lain merupakan determinan Gram yang merupakan kuadrat dari volume
dari paralelotop berdimensi-n yang dibangun oleh x1; ;xn.
Tugas akhir ini membahas tentang sudut antara dua subruang dari suatu ruang
hasil kali dalam-n dan representasinya secara geometris. Lebih lanjut, dipelajari
hubungannya dengan sudut-sudut kanonik yang selama ini telah digunakan untuk
mendeskripsikan sudut antara dua ruang.
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ABSTRACT
The definitions of n-inner product space and n-normed space as generalizations
of inner product space and normed space are introduced. Every inner product
space can form an n-inner product space with a simple n-inner product
hx0;x1jx2; ;xni =

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hx2;x1i hx2;x2i hx2;xni .
..
...
. . . ...

hxn;x1i hxn;x2i hxn;xni

:

The simple n-inner product induces a standard n-norm

kx1; ;xnk =phx1;x1jx2; ;xni;

which is actually the Gram determinant which represents the square root of the volume of the n-dimensional parallelotope generated by x1; ;xn.

This thesis discussed the angle between subspaces of an n-inner product space and its geometrical representation. Moreover, its relation to canonical angles, which has been used for describing the angles between two subspaces, is observed too.;The definitions of n-inner product space and n-normed space as generalizations of inner product space and normed space are introduced. Every inner product space can form an n-inner product space with a simple n-inner product

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