
Subject: Re: Determinant of a matrix

Posted by [lecacheux.alain](#) on Wed, 20 Nov 2013 13:37:17 GMT

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Le mercredi 20 novembre 2013 13:09:48 UTC+1, fd_...@mail.com a écrit :

> Hi

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> I want to check the linear independence of the columns on my matrix. I found the function DETERM() but this works only in cases where the matrix is NXN. In my case the matrix is NX4 (N-rows, 4-columns).

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> How can I calculate the determinant of that matrix?

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> Many Thanks

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> Ma

> How can I calculate the determinant of that matrix?

You cannot, because determinant is not defined for a non square matrix.

> I want to check the linear independence of the columns on my matrix

What you are asking for is the rank of your matrix (i.e., mathematically, the number of independent columns). Matrix rank can be determined by singular value decomposition: the rank is the number of singular values which are not zero. In IDL, you can write:

if A is your matrix:

```
IDL> LA_SVD, A, W, U, V
```

```
IDL> rank_of_A = N_elements(W[where(W ne 0)])
```

alx.
