Subject: Re: Matlab Syntax
Posted by James Kuyper on Thu, 20 Nov 2003 21:44:21 GMT
View Forum Message <> Reply to Message

David Fanning wrote:
>
> Folks,
>
> I need more Matlab help. Here is the line I am
> struggling with:
>
> invAI = inv(A + gamma * diag(ones(1,N)));
>
> A is a matrix and gamma is the scalar 1.0.
>
> Here is the output from Matlab when I print
> A and invAI:
>
> A =
> 8 -5 1 1 -5
> -5 8 -5 1 1
> 1 -5 8 -5 1
> 1 1 -5 8 -5
> -5 1 1 -5 8
>
> invAI =
>
> 0.3158 0.2105 0.1316 0.1316 0.2105
> 0.2105 0.3158 0.2105 0.1316 0.1316
> 0.1316 0.2105 0.3158 0.2105 0.1316
> 0.1316 0.1316 0.2105 0.3158 0.2105
> 0.2105 0.1316 0.1316 0.2105 0.3158
>
> I have the matrix A in my IDL session:
>
> IDL> print, array
> 8.00000 -5.00000 1.00000 1.00000 -5.00000
> -5.00000 8.00000 -5.00000 1.00000 1.00000
> 1.00000 -5.00000 8.00000 -5.00000 1.00000
> 1.00000 1.00000 -5.00000 8.00000 -5.00000
> -5.00000 1.00000 1.00000 -5.00000 8.00000
>
> But I get the wrong answers when I invert. Here is
> my translation of the Matlab inverse line:
>
> invARRAY = Invert((ARRAY + gamma) ## Diag_Matrix(Replicate(1,npts)))

I know nothing special about Matlab, but the matlab equation seems

pretty clear. I assume that inv() and Invert() do the same thing, and that diag() and Diag_Matrix() serve the same purpose, and that ones(1,N) does the same thing as Replicate(1,npts). If so, then unless I'm massively confused (which is possible), shouldn't that be:

invARRAY = Invert((ARRAY + gamma * Diag_Matrix(Replicate(1,npts))))
