Re: Jacobian determinant and inverse function theorem

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Yes, this is a very clear explanation indeed.
On the question why det is continuous I would answer that by definition
det is a sum of products of a sign function and matrix entries (which
in the case at hand are known to be continuous). Is this correct?
This all leaves me wondering why my textbook (SA Douglass) glossed
completely over the issue you just clarified for me, while it usually
explains and proves everything into the smallest detail.

Thanks for your kind effort.

Frank

> Ok. I was a bit hasty with my first reply. So here is what you might be
> expecting:
>
> Define on the n−fold product U^(n) of U, i.e. U x ... x U (n times), the
> matrix−valued map F: U^(n) −> R^(nxn) where F(z1,...,zn) is the matrix
> you mentioned above. F is continuous, since any of the component
> functions of F is continuous by assumption. Now consider the composition
> G of maps det o F: U^(n) −> R^(nxn) −> R where det denotes the
> determinant function. Since det is continuous (why?), G is continuous.
> It holds G(c^(n))=Jf(c)<>0 (with c^(n)=(c,...,c) (n times)).
>
> Can you conclude from here what you need?
>
> Best wishes,
> J.

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