Subject: Re: Function Maximum
Posted by Craig Markwardt on Thu, 19 Jun 2003 16:50:02 GMT
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James Kuyper <kuyper@saicmodis.com> writes:

> Benjamin Panter wrote:
> ...
>> An inelegant solution that might work is to evaluate the funtion in the
>> range of interest to as high a precision as is computationally possible
>> - and then run MAX() on it - but there must be a nicer way? I think this
>> method will fall down if there is a very sharp global max but a wider
>> local max
>>
>> Apologies for not being much of a mathematician and failing to provide a
>> better way!
>
> Actually, for an arbitrary function, the method you describe is the only
> method that is absolutely guaranteed to find the true maximum value. Any
> method that is faster than that one is based upon assumptions about the
> function, such as the assumption that it is reasonably smooth.

Even the brute force method described above assumes that the function
is smooth enough that it doesn't vary in between grid samples. For
example, a finite sum of delta functions at random positions would
probably be missed by any approach.

Craig

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