Subject: A case where FOR loops are unavoidable?
Posted by gknoke on Mon, 27 Nov 2006 22:19:16 GMT
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Hi all, I'm trying to setup an array for the computation of a rather tricky multidimensional function, but I'm seeing no way around using FOR loops in its creation. I've been trying to figure out an appropriate vector solution, but so far I'm drawing a blank.

The equation goes as follows:

f(x, b1, b2, p) = alog((1/b1)*(1-p)*exp(-x/b1) + (1/b2)*p*exp(-x/b2))

Here x is a vector roughly of length 2^20, b1 and b2 are roughly 100-1000 elements, and p is roughly 10-50 elements. I realize that this is a larger array than is likely to fit in memory, but what I'm really after is the sum of this function in the x dimension, i.e. the final output should be something like:

f_out(b1,b2,p) = total(f(x,b1,b2,p), 1)

My approach to this is to loop over b1, b2, and p to take advantage of being able to use the total function to keep the array size manageable, like so:

```
for k=1,np
  for i=1,nb1
    for j=1,nb2
      f_out(i,j,k) = total(f(x, b1[i], b2[j], p[k]), 1)
etc. etc.
```

This works, but I'm wondering if there are any better approaches?