
Subject: Re: help on optimization

Posted by [Wout De Nolf](#) on Thu, 23 Jun 2011 12:44:06 GMT

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On Thu, 23 Jun 2011 02:38:00 -0700 (PDT), stefania
<stefania.giodini@gmail.com> wrote:

> Any help/idea/feedback will be very useful!

1. I don't think the preselection speeds things up, so skip it.
2. Avoid using WHERE by specifying a MAX in histogram (use 100^ to avoid SQRT).
3. Remove some redundancy in total / cumulative total.

```
xgaspos=file_gaspos[0,*]  
ygaspos=file_gaspos[1,*]
```

```
for i=0,nhalos do begin  
  ;Distance of particles to the halo  
  dis2=(xrand[i]-xgaspos)^2+(yrand[i]-ygaspos)^2
```

```
  ;histogram distances within 10Mpc  
  hist =histogram(dis2[ind_gas],binsize=bin_mpc,$  
    max=10000,reverse_indices=ri)
```

```
  gasmass=file_gasmass[ind_gas]  
  for ll=0,n_elements(hist)-1 do $  
    if ri[ll] eq ri[ll+1] then gasm[ll]=0 $  
    else gasm[ll]=total(gasmass[ ri[ ll]:ri[ll+1]-1 ] )
```

```
  ymin_r_gas+=total(gasm,/cumul,/pres) ; Sigma(<r)  
  yplot_gas+=gasm ; Sigma(r)  
endfor
```

4. You can think of calculating "dis" outside the loop but it depends on how many columns file_gaspos has (memory issues). Assume xrand and yrand are row vectors:

```
dis=sqrt((rebin(xrand,nhalos,np,/sample)-rebin(file_gaspos[0,*],nhalos,np,/sample))^2+$  
(rebin(yrand,nhalos,np,/sample)-rebin(file_gaspos[1,*],nhalos,np,/sample))^2)
```

You can also divide nhalos in smaller chunks. However you still need

to do the histogram and mass summation for each column separatly.
