
Subject: Re: Maximum intensity projection (MIP)
Posted by [Paolo Grigis](#) on Thu, 12 Apr 2007 13:52:50 GMT
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Anne Martel wrote:

```
> Steve,  
>  
> For a mip in the x-y plane you just need to do  
>  
> mipIm=data[:,*,0]  
> for i = 1,79 do mipIm = mipIm > data[:,*,i]
```

You can avoid the loop using the dimension keyword of max:
mipIm=max(data,dimension=3)

Ciao,
Paolo

```
>  
> I've pasted my mip routine below - it gives you more control over the  
> orientation and slices to use. I posted an interactive GUI version on  
> the IDL website a few years ago - I think it was called xmip and it  
> should still be there,  
>  
> Anne  
>  
> $Id: mip.pro $  
> ;  
> ;+  
> ; NAME:  
> ; MIP  
> ;  
> ; PURPOSE:  
> ; Function to return the max (or min) intensity projection of  
> ; an array of images.  
>  
> ; CATEGORY:  
> ;  
> ;  
> ; CALLING SEQUENCE:  
> ; myMipImage=MIP(image)  
> ;  
> ; INPUTS:  
> ; image - raw image image - must be a 3D array  
>  
> ; KEYWORD PARAMETERS:  
>  
> ; ORIENTATION: This gives the orientation of the mip image.
```

```

> ; default = 2 -ie mip generated using images (*,*,i)
> ;
>
> can also have 0 or 1
> ; MAXIMUM: Generates max intensity projection image (the default)
> ; MINIMUM: Generates min intensity projection image
> ; X_LOWER, X_UPPER: extent of array in X direction with which to
> generate the mip.
> ; Only has an effect if orientation=0
> ; Y_LOWER, Y_UPPER: extent of array in Y direction with which to
> generate the mip.
> ; Only has an effect if orientation=1;
> ; Z_LOWER, Z_UPPER: extent of array in Z direction with which to
> generate the mip.
> ; Only has an effect if orientation=2
> ;Default is to use complete array
>
> ; MODIFICATION HISTORY:
> ; 7/3/01 anne: orientation keyword and lower and upper bounds keywords
> added
> ; 7/10/02 anne: minimum keyword added
>
>
> ;-
>
> FUNCTION Mip, image,orientation=orientation , $
> maximum=maximum, minimum=minimum, $
> x_Lower=xLower,x_Upper=xUpper, $
> y_Lower=yLower,y_Upper=yUpper, $
> z_Lower=zLower,z_Upper=zUpper
>
> if n_elements(orientation) eq 0 then orientation = 2
> if keyword_set(minimum) then mode=1 else mode=0
>
> s=size(image)
>
> xsize = s[1]
> ysize = s[2]
> zsize = s[3]
>
> case orientation of
> 2: begin
> if keyword_set(zLower) then zLower=zLower>0 else zLower=0
> if keyword_set(zUpper) then zUpper=zUpper<zsize-1 else
> zUpper=zsize-1
> mipImage=image[*,*,zLower]
> if mode eq 0 then begin ; max intensity
> for i = zLower+1, zUpper do begin

```

```

>   miplImage=miplImage>image[*,* ,i]
>   endfor
> endif else begin ; min_intensity
>   for i = zLower+1, zUpper do begin
>     miplImage=miplImage<image[*,* ,i]
>   endfor
> endelse
>   end
>   1: begin
>   if keyword_set(yLower) then yLower=yLower>0  else yLower=0
>   if keyword_set(yUpper) then yUpper=yUpper<ysize -1  else
> yUpper=ysize-1
>   miplImage=image[* ,yLower,*]
>   if mode eq 0 then begin ; max intensity
>     for i = yLower+1, yUpper do begin
>       miplImage=miplImage>image[* ,i,*]
>     endfor
>   endif else begin ; min_intensity
>     for i = zLower+1, zUpper do begin
>       miplImage=miplImage<image[* ,i,*]
>     endfor
>   endelse
>   miplImage=reform(miplImage)
>   end
>
>   0: begin
>   if keyword_set(xLower) then xLower=xLower>0  else xLower=0
>   if keyword_set(xUpper) then xUpper=xUpper<xsize-1  else
> xUpper=xsize-1
>   miplImage=image[xLower,* ,*]
>   if mode eq 0 then begin ; max intensity
>     for i = xLower+1, xUpper do begin
>       miplImage=miplImage>image[i ,* ,*]
>     endfor
>   endif else begin ; min_intensity
>     for i = zLower+1, zUpper do begin
>       miplImage=miplImage<image[i ,* ,*]
>     endfor
>   endelse
>   miplImage=transpose(reform(miplImage))
>   ;using transpose maintains orientation so that y remains along
> vertical axis
>   end
>
>   else:
>
> endcase
>

```

```
>  
> RETURN, miplImage  
>  
> END  
>  
>  
>  
>  
>  
> On Apr 12, 8:34 am, "StevenM" <s.maclel...@strath.ac.uk> wrote:  
>> Hi all,  
>>  
>> I have a 3d data set as a 320x80x80 array. Can anyone tell me if  
>> there is an easy way to do a maximum intensity projection using IDL.  
>>  
>> thanks  
>>  
>> Steven  
>  
>  
>  
>  
>
```
