
Subject: Re: Maximum intensity projection (MIP)
Posted by [Anne Martel](#) on Thu, 12 Apr 2007 13:10:03 GMT
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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]
```

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
      mipImage=mipImage>image[*,*,i]
    endfor
  endif else begin ; min_intensity
    for i = zLower+1, zUpper do begin
      mipImage=mipImage<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
