
Subject: How to find second minimum and maximum in 3D array?

Posted by [Harald Frey](#) on Wed, 25 Feb 2015 20:01:50 GMT

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I have a time series of ~200 images with dimensions [X,Y]=[400,250]. My data is a `UINTARR[200,400,250]`. It is very easy to get the minimum and maximum for each pixel X,Y in my time series using

```
res=min(array,dimension=1,max=max_val)
IDL> help,res,max_val
RES      FLOAT    = Array[400, 250]
MAX_VAL   FLOAT    = Array[400, 250]
```

However, several pixels have 0 value or 65535 value and I want the second minimum and second maximum which are not 0 or 65535. I can do this in a for-loop, but is there a more clever and faster way?

```
min_array=uintarr(400,250)
max_array=uintarr(400,250)
for x=0,400-1 do begin
  for y=0,300-1 do begin
    good=where (array[* ,x,y] gt 0 and array[* ,x,y] lt 65535)
    res=min(array[good,x,y],dimension=1,max=max_val)
    min_array[x,y]=res
    max_array[x,y]=max_val
  endfor
endfor
```

Thanks,
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