
Subject: RESIZE_DOIT with INTERP=1 shifts image !!!
Posted by [Josip Krizan](#) on Fri, 10 Nov 2006 13:58:53 GMT
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Hi!

I have problem with applying RESIZE_DOIT procedure with bilinear resampling on georeferenced images. It seems to me that resulting image is shifted for half size of pixel of original image to right and down, for any rfact<1. Is it by design or there is a bug or am i doing something wrong.
I wrote small test routine to demonstrate this. If someone can just look at it ...

Thanks,

Code:

```
PRO TEST_RESIZE_DOIT
  compile_opt IDL2
  envi, /restore_base_save_files
  envi_batch_init, log_file='batch_log.txt'

  imgName = 'C:\RS\IDL63\products\envi43\data\bhtmref.img'
  RFACT = REPLICATE(1.0/3.0, 2)

  ENVI_OPEN_FILE, imgName, R_FID=fidOrig
  mapInfo = ENVI_GET_MAP_INFO(FID=fidOrig)

  ; bound rect of some region
  xCImg=[100, 110]
  yCImg=[300, 310]
  dimsC = [-1L, xCImg[0], xCImg[1]-1, yCImg[0], yCImg[1]-1]

  ENVI_CONVERT_FILE_COORDINATES, fidOrig, xCImg, yCImg, $
    xCMap, yCMap, /TO_MAP

;INTERP =0
ENVI_DOIT, 'RESIZE_DOIT', FID=fidOrig, DIMS=dimsC, $
  POS=0, INTERP=0, RFACT=rfact, R_FID=fidRes, /IN_MEMORY

ENVI_FILE_QUERY, fidRes, NS=ns, NL=nl

;bound rect of whole image
; as i understand: center of UL pixel is [0.5, 0.5],
; and BR is [ns-0.5, nl-0.5]

xC1Img = [0, ns]
yC1Img = [0, nl]
```

```
dimsRes=[-1L, 0, ns-1, 0, nl-1]
```

```
ENVI_CONVERT_FILE_COORDINATES, fidRes, xC1Img, yC1Img, $  
xC1Map, yC1Map, /TO_MAP
```

```
dataOrig = ENVI_GET_DATA(FID=fidOrig, DIMS=dimsC, POS=0)  
dataRes0 = ENVI_GET_DATA(FID=fidRes, DIMS=dimsRes, POS=0)
```

```
ENVI_FILE_MNG, ID=fidRes, /REMOVE
```

```
PRINT, '***** NEAREST NEIGHBOURHOOD (INTERPOL=0) *****'  
PRINT, 'Original pixel size: ', mapInfo.PS  
PRINT, 'Resized pixel size: ', mapInfo.PS * rfact  
PRINT, 'delta X: ', xC1Map - xCMap  
PRINT, 'delta Y: ', yC1Map - yCMap
```

```
PRINT, 'Orig. data: ', SIZE(dataOrig, /DIMENSIONS)  
PRINT, dataOrig
```

```
PRINT, 'Resized data:', SIZE(dataRes, /DIMENSIONS)  
PRINT, dataRes0
```

```
;INTERP = 1
```

```
ENVI_DOIT, 'RESIZE_DOIT', FID=fidOrig, DIMS=dimsC, $  
POS=0, INTERP=1, RFACT=rfact, R_FID=fidRes, /IN_MEMORY
```

```
ENVI_FILE_QUERY, fidRes, NS=ns, NL=nl
```

```
;bound rect of whole image  
; as i understand: center of UL pixel is [0.5, 0.5],  
; and BR is [ns-0.5, nl-0.5]
```

```
xC1Img = [0, ns]  
yC1Img = [0, nl]  
dimsRes=[-1L, 0, ns-1, 0, nl-1]
```

```
ENVI_CONVERT_FILE_COORDINATES, fidRes, xC1Img, yC1Img, $  
xC1Map, yC1Map, /TO_MAP
```

```
dataOrig = ENVI_GET_DATA(FID=fidOrig, DIMS=dimsC, POS=0)  
dataRes1 = ENVI_GET_DATA(FID=fidRes, DIMS=dimsRes, POS=0)
```

```
PRINT, '***** BILINEAR (INTERPOL=1) *****'  
PRINT, 'Original pixel size: ', mapInfo.PS  
PRINT, 'Resized pixel size: ', mapInfo.PS * rfact  
PRINT, 'delta X: ', xC1Map - xCMap  
PRINT, 'delta Y: ', yC1Map - yCMap
```

```
PRINT, 'Orig. data: ', SIZE(dataOrig, /DIMENSIONS)
PRINT, dataOrig

PRINT, 'Resized data:', SIZE(dataRes, /DIMENSIONS)
PRINT, dataRes1

PRINT, 'Difference: '
PRINT, BYTE((LONG(dataRes1) - dataRes0)+20)

ENVI_BATCH_EXIT
END
```
