Subject: Re: what is the most convenient way to read an image generated by ENVI in IDL

Posted by Peter Scarth on Tue, 22 Oct 2002 08:40:58 GMT

View Forum Message <> Reply to Message

Hi Julia,

Assuming that you have ENVI on the system, you can use something like the following (pseudocode?) to read an ENVI image, and write the processed results back to an ENVI format file. Check the ENVI help for more info on the batch functions. If you don't have ENVI you will have to write some code to read the header. I have a kludgy solution I can send if you want.

```
Peter
(Change xmg to gmx to reply!)
PRO envi_batch_processing_demo
COMPILE OPT strictarr
; Restore the ENVI save files and initialise
ENVI, /restore base save files
ENVI_BATCH_INIT
; Open, query and read the entire image into an array
; Change dims and/or the pos variables to read in a subset
ENVI_OPEN_FILE, 'test.img', r_fid=fid
ENVI FILE QUERY, fid, ns=ns, nl=nl,nb=nb,$
       interleave=interleave,data type=data type,offset=offset
dims = [-1, 0, ns-1, 0, nl-1]
imgdata = ENVI GET DATA(fid=fid, dims=dims, pos=indgen(nb))
 Processing goes here to produce processed_data
; Write the output into a file...
; A simpler way might be to use the
; WRITE ENVI FILE procedure available at
; http://www.rsinc.com/services/output.cfm?tip id=2787
fname = 'processed.img'
OPENW, unit, fname, /get_lun
WRITEU, unit, processed data
FREE LUN, unit
: Create an ENVI header for convenience
; Change ns, nl, nb, data type, interleave and offset below
; if your processed data differs from the input in type or size!
```

```
ENVI SETUP HEAD, fname=fname, ns=ns, nl=nl, nb=nb, $
          interleave=interleave, data_type=data_type,$
          offset=offset, /write
ENVI_BATCH_EXIT
END
"Julia" <julia65201@yahoo.com> wrote in message
news:ap2fi4$3oq$1@dipsy.missouri.edu...
> Hi, there,
> After some operations in ENVI, I output the resulting image using the
format
> '.img'. It's an multispectral image.
> The '.hdr' head file is like this:
> ENVI
> description = {
> image [Fri Oct 18 11:01:10 2002]}
> samples = 116
> lines = 261
> bands = 4
> header offset = 0
> file type = ENVI Standard
> data type = 4
> interleave = bsq
> sensor type = Unknown
> byte order = 0
>
> My question is: how can I read this file using IDL functions?
> Now I am doing this using the following:
> imgdata = READ_BINARY('test.img', DATA_TYPE = 4, DATA_DIMS = [116, 261,
> 4]).
> But I need to specify the data type and dimensions of the image. How can I
> read it more generally that I need to specify nothing? Is there other
> functions in IDL?
>
 Any suggestion will be appreciated.
```

>

>

> Regards,

> Julia

Subject: Re: what is the most convenient way to read an image generated by ENVI in IDL

Posted by Julia on Tue, 22 Oct 2002 16:18:14 GMT

View Forum Message <> Reply to Message

Hi, Peter,

I think writing an image file is not difficult. But reading a file has some problem:

If we use ENVI function: ENVI_GET_DATA, from my experience, it can only read one band out each time.

If we use:

imgdata = ENVI_GET_DATA(fid=fid, dims=dims, pos=indgen(nb))

Though the image has several bands, it can only read the first band into imgdata.

So if you have some code to read the header written in IDL, could you please send to my email address: julia65201@yahoo.com.

Thanks,

Julia

"Peter Scarth" <p.scarth@xmg.net> wrote in message news:ap32uu\$vtk\$1@bunyip.cc.uq.edu.au...

- > Hi Julia.
- > Assuming that you have ENVI on the system, you can use something like the
- > following (pseudocode?) to read an ENVI image, and write the processed
- > results back to an ENVI format file. Check the ENVI help for more info on
- > the batch functions. If you don't have ENVI you will have to write some code
- > to read the header. I have a kludgy solution I can send if you want.
- > Peter
- > --

>

> (Change xmg to gmx to reply!)

> >

- > PRO envi_batch_processing_demo
- > COMPILE OPT strictarr

>

- > : Restore the ENVI save files and initialise
- > ENVI, /restore_base_save_files

```
> ENVI BATCH INIT
>
> ; Open, query and read the entire image into an array
> ; Change dims and/or the pos variables to read in a subset
> ENVI_OPEN_FILE, 'test.img', r_fid=fid
> ENVI_FILE_QUERY, fid, ns=ns, nl=nl,nb=nb,$
         interleave=interleave,data_type=data_type,offset=offset
> dims = [-1, 0, ns-1, 0, nl-1]
> imgdata = ENVI_GET_DATA(fid=fid, dims=dims, pos=indgen(nb))
>
>
  ; Processing goes here to produce processed data
>
>
 ; Write the output into a file...
  ; A simpler way might be to use the
> : WRITE ENVI FILE procedure available at
> ; http://www.rsinc.com/services/output.cfm?tip_id=2787
> fname = 'processed.img'
> OPENW, unit, fname, /get_lun
> WRITEU, unit, processed_data
> FREE LUN, unit
>
 ; Create an ENVI header for convenience
  ; Change ns, nl, nb, data_type, interleave and offset below
 ; if your processed_data differs from the input in type or size!
  ENVI SETUP HEAD, fname=fname, ns=ns, nl=nl, nb=nb, $
            interleave=interleave, data type=data type,$
>
            offset=offset, /write
>
> ENVI_BATCH_EXIT
 END
>
>
>
  "Julia" <julia65201@yahoo.com> wrote in message
> news:ap2fi4$3oq$1@dipsy.missouri.edu...
>> Hi. there.
>>
>> After some operations in ENVI, I output the resulting image using the
>> '.img'. It's an multispectral image.
>> The '.hdr' head file is like this:
>> ENVI
>> description = {
>> image [Fri Oct 18 11:01:10 2002]}
```

```
>> samples = 116
>> lines = 261
>> bands = 4
>> header offset = 0
>> file type = ENVI Standard
>> data type = 4
>> interleave = bsq
>> sensor type = Unknown
>> byte order = 0
>>
>> My question is: how can I read this file using IDL functions?
>> Now I am doing this using the following:
>> imgdata = READ_BINARY('test.img', DATA_TYPE = 4, DATA_DIMS = [116, 261,
>> 4]).
>>
>> But I need to specify the data type and dimensions of the image. How can
>> read it more generally that I need to specify nothing? Is there other
>> functions in IDL?
>>
>> Any suggestion will be appreciated.
>> Regards,
>>
>> Julia
>>
>>
>>
>
>
>
```

Subject: Re: what is the most convenient way to read an image generated by ENVI in IDL

Posted by Peter Scarth on Wed, 23 Oct 2002 14:42:35 GMT View Forum Message <> Reply to Message

Ooops, your absolutely correct.

To read in the entire file using ENVI_GET_DATA you need to create an array of the correct size & type & read it in band by band:

```
; Make an array to hold the data imgdata=make_array(ns,nl,nb,type=data_type,/nozero) ; Read it in band by band for pos=0,nb-1 do imgdata[*,*,pos] = ENVI_GET_DATA(fid=fid, dims=dims, pos=pos)
```

I'll dig out the other code anyway & send it across. Cheers, Peter "Julia" <julia65201@yahoo.com> wrote in message news:ap3tie\$678\$1@dipsy.missouri.edu... > Hi, Peter, > > I think writing an image file is not difficult. But reading a file has some > problem: > If we use ENVI function: ENVI_GET_DATA, from my experience, it can only read one band out each time. > If we use: > imgdata = ENVI_GET_DATA(fid=fid, dims=dims, pos=indgen(nb)) > Though the image has several bands, it can only read the first band into > imgdata. > So if you have some code to read the header written in IDL, could you please > send to my email address: > julia65201@yahoo.com. > > Thanks, > Julia > > "Peter Scarth" <p.scarth@xmg.net> wrote in message > news:ap32uu\$vtk\$1@bunyip.cc.uq.edu.au... >> Hi Julia, >> Assuming that you have ENVI on the system, you can use something like the >> following (pseudocode?) to read an ENVI image, and write the processed >> results back to an ENVI format file. Check the ENVI help for more info on >> the batch functions. If you don't have ENVI you will have to write some > code >> to read the header. I have a kludgy solution I can send if you want. >> >> Peter >> (Change xmg to gmx to reply!) >> >>

```
>> PRO envi batch processing demo
>> COMPILE OPT strictarr
>>
>> : Restore the ENVI save files and initialise
>> ENVI, /restore base save files
>> ENVI_BATCH_INIT
>>
>> ; Open, query and read the entire image into an array
>> ; Change dims and/or the pos variables to read in a subset
>> ENVI OPEN FILE, 'test.img', r fid=fid
>> ENVI_FILE_QUERY, fid, ns=ns, nl=nl,nb=nb,$
          interleave=interleave,data type=data type,offset=offset
>> dims = [-1, 0, ns-1, 0, nl-1]
  imgdata = ENVI_GET_DATA(fid=fid, dims=dims, pos=indgen(nb))
>>
>>
>> : Processing goes here to produce processed data
>>
>>
>> ; Write the output into a file...
>> ; A simpler way might be to use the
>> ; WRITE ENVI FILE procedure available at
>> ; http://www.rsinc.com/services/output.cfm?tip_id=2787
>> fname = 'processed.img'
>> OPENW, unit, fname, /get_lun
>> WRITEU, unit, processed_data
>> FREE_LUN, unit
>> ; Create an ENVI header for convenience
>> ; Change ns, nl, nb, data_type, interleave and offset below
>> ; if your processed data differs from the input in type or size!
>>
  ENVI_SETUP_HEAD, fname=fname, ns=ns, nl=nl, nb=nb, $
             interleave=interleave, data_type=data_type,$
>>
             offset=offset, /write
>>
>> ENVI_BATCH_EXIT
>> END
>>
>>
>>
   "Julia" <julia65201@yahoo.com> wrote in message
>> news:ap2fi4$3oq$1@dipsy.missouri.edu...
>>> Hi, there,
>>>
>>> After some operations in ENVI, I output the resulting image using the
>> format
```

```
>>> '.img'. It's an multispectral image.
>>> The '.hdr' head file is like this:
>>> ENVI
>>> description = {
>>> image [Fri Oct 18 11:01:10 2002]}
>>> samples = 116
>>>  lines = 261
>>> bands = 4
>>> header offset = 0
>>> file type = ENVI Standard
>>> data type = 4
>>> interleave = bsq
>>> sensor type = Unknown
>>> byte order = 0
>>>
>>> My question is: how can I read this file using IDL functions?
>>> Now I am doing this using the following:
>>> imgdata = READ_BINARY('test.img', DATA_TYPE = 4, DATA_DIMS = [116,
261.
>>> 4]).
>>>
>>> But I need to specify the data type and dimensions of the image. How
can
>>> read it more generally that I need to specify nothing? Is there other
>>> functions in IDL?
>>>
>>> Any suggestion will be appreciated.
>>>
>>> Regards,
>>> Julia
>>>
>>>
>>>
>>
>>
>>
>>
>
>
```