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Importing Movies - Errors

Thu, 01/31/2019 - 12:35

#1

vfielding14

Importing Movies - Errors

When I try to import movies into my database, I get the following error message:

```
> /...../input/20190111_1154_A001_G000_H007_D001.mrc is not a valid image file, skipping
```

This happens regardless of the settings I provide, and if I try to include a .mrc gain reference file, I get a similar message:

```
> ...../input/20190111_1154_A001_G000_H007_D001.mrc does not have the same size as the provided gain reference, skipping
```

My movies are ~356 MB, and the gain reference is ~55 MB. I've never had to do this before, so forgive me if this is a silly question.

Thank you,

Tori

timgrant

Hi Tori,

Hi Tori,

If these mrc files can be read by other programs, this probably means that your MRC is in a format cannot be read by the released version of cisTEM (e.g. it is 4-bit). To check this, you could run header from imod on the file and see what it reports, if you paste the result here, I should be able to tell you the problem / a way of converting it.

Thanks,

Tim

Thu, 01/31/2019 - 15:06 (Reply to #2)

vfielding14

Hi Tim,

Hi Tim,

Thank you for the response. Apparently these are 4-bit, and I have included the header readout for a file below:

RO image file on unit 1 :
20190111_1154_A005_G002_H067_D001.mrc Size= 347636 K

This file actually has 4-bit values and is MRC mode 101

```
Number of columns, rows, sections ..... 3710 3838 50
Map mode ..... 0 (byte)
Start cols, rows, sects, grid x,y,z ... 0 0 0 3710 3838 50
Pixel spacing (Angstroms)..... 1.220 1.220 1.220
Cell angles ..... 90.000 90.000 90.000
Fast, medium, slow axes ..... X Y Z
Origin on x,y,z ..... 0.000 0.000 0.000
Minimum density ..... 0.0000
Maximum density ..... 12.000
Mean density ..... 1.6563
tilt angles (original,current) ..... 0.0 0.0 0.0 0.0 0.0 0.0
Space group,# extra bytes,idtype,lens . 0 0 0 0
```

1 Titles :
Digital Micrograph(TM), GMS v 3.22

Thanks for your help!

Tori

timgrant

Hi Tori,

Hi Tori,

The released version of cisTEM does not read 4-bit files (the next release will). You could try using the imod program mrcbyte to convert it to 8-bit, and hopefully that can be imported to cisTEM. I would try it on a single movie first to double check.

Thanks,

Tim

Fri, 02/01/2019 - 10:49 (Reply to #4)

Good morning Tim,

As per your suggestion, I ran mrc byte on one of my files using all default settings.

Is there a way to tell if this will impact the resolution of my final reconstruction? I was able to upload the _byte.mrc converted file successfully in cisTEM in a test database.

My resulting files are outlined below.

Thank you,

Tori

Defaults for [image].mrc size = (3710 x 3838 x 50):
 x = (0, 3709), y = (0, 3837), z = (0, 49), c = (0, 255)
 Enter (min x, max x). (return for default) >
 Enter (min y, max y). (return for default) >
 Enter sections (low, high) >
 Enter (black level, white level) >

This converted file produced the following header:

```
RO image file on unit 1 : [image]_byte.mrc   Size=   695263 K

Number of columns, rows, sections ..... 3710 3838 50
Map mode ..... 0 (bytes - signed in file)
Start cols, rows, sects, grid x,y,z ... 0 0 0 3710 3838 50
Pixel spacing (Angstroms)..... 1.220 1.220 1.220
Cell angles ..... 90.000 90.000 90.000
Fast, medium, slow axes ..... X Y Z
Origin on x,y,z ..... 0.000 0.000 0.000
Minimum density ..... 0.0000 ( -128.00 in file)
Maximum density ..... 255.00 ( 127.00 in file)
Mean density ..... 35.283 ( -92.717 in file)
tilt angles (original,current) ..... 0.0 0.0 0.0 0.0 0.0 0.0
```

Space group,# extra bytes,idtype,lens . 0 0 0 0

2 Titles :

Digital Micrograph(TM), GMS v 3.22

mrcbyte: Converted and scaled to byte mode.

01-Feb-19

10:40:48

timgrant

Hi Tori,

Hi Tori,

In theory it shouldn't affect your resolution at all, as 8-bit contains more information than 4-bit. The only weird thing is that the max and min value changed. Do the images look the same when displayed in say imod?

Cheers,

Tim

Mon, 02/04/2019 - 10:24 (Reply to #6)

vfielding14

Hi Tim,

Hi Tim,

When I look at the original .mrc image vs the converted _byte.mrc image, they appear identical in imod. When I look at the image information, they have identical center coordinates, offsets, and image size (3710x3838).

Could the difference in the min and max be a result of scaling? Thanks for all your help in this process!

Best,

Tori

timgrant

Hi Tori,

Hi Tori,

Yes it will be because of scaling. If they look identical, it is likely fine to use them.

Cheers,

Tim

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