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calibrate pixel size

Sun, 09/16/2018 - 11:10

#1

kuenphonwu

calibrate pixel size

Hi,

After determining the 3D map by cisTEM (Thank you for the fantastic UI and performance), I realized the pixel size provided from microscope is slightly larger than it should be.

Now I have calibrated pixel size and wonder what is the best way to recalculate the 3D EM map.

I could redo everything from movie alignment with new pixel size though I am looking for options to calibrate pixel resolution during refinement or creating refinement package.

Can cisTEM handle pixel size calibration instead of re-run everything?
Thank you.

Kuen

timgrant

Hi Kuen,

Hi Kuen,

In theory - you could simply save your current alignment parameters (refinement results - pop out parameters button - save). Then import a refinement package using the same stack, and these parameters. This will enable you to change the pixel size.

HOWEVER - if you do this, you will see that when you continue refinement / regenerate the 3D your FSC will be much worse, and probably look weird. This is because your defocus values are no longer correct for this pixel size. You may be able to simply do a defocus refinement, but this is likely to be sub-optimal, so if you want to change your pixel size and continue refinement you really need to go back to CTF estimation.

Cheers,

Tim

Mon, 09/17/2018 - 13:54 (Reply to #2)

kuenphonwu

Hi Tim,

Hi Tim,

Thank you for the suggestions. I actually did what you explained before sending question at cisTEM forum. The FSC looks weird and much worse than earlier version. I am redo everything from movie alignment and CTF estimation.

Cheers,

Kuen

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