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Suspicious reported resolution

Thu, 12/05/2019 - 16:39 #1

whiteqiu

Suspicious reported resolution

Hi,

I recently used cistem patch to refine ctf values and then got the resolution report from reconstruction to 3.1A. However, the map seems to be 4-5A resolution given no clear side chain density present. Does anyone have experience with it? The FSC table is attached.

Thanks in advance!

Yu

File:
my_statistics.txt

timgrant

Hi Yu,

Hi Yu,

What is the highest resolution you have used for your refinement?

Tim

Fri, 12/06/2019 - 17:17 (Reply to #2)

whiteqiu

Hi Tim,

Hi Tim,

I used 2.12A as high-res cutoff for refinement. The pixel size is 1.06.

Best,

Yu

timgrant

Hi Yu,

Hi Yu,

Then your reconstruction is likely very overfit. It is important to keep this resolution below the true resolution. The auto-refine panel tries to do this automatically - did you run an autorefine - what resolution did that give?

Tim

Sun, 12/08/2019 - 18:25 (Reply to #4)

whiteqiu

Hi Tim,

Hi Tim,

I did auto refine earlier, which reported resolution ~5A. Then I used cisTEM patch to optimize per particle ctf. Here I used 2.12 A as high res cutoff when I did 3D reconstruction. Do you mean I should use lower res cut off, such as 5-6 A at the reconstruction step?

Thanks,

Yu

Sun, 12/08/2019 - 21:12 (Reply to #5)

timgrant

Hi Yu,

Hi Yu,

What is patch?

if you only have 5A, then per particle CTF is unlikely to improve things. You cannot use resolutions greater than you actually have in the refinement, it won't help the refinement (as you are just including extra noise), and it will lead to overfitting and overestimation of the resolution.

Tim

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