MT Refinement

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Rick_Baker

MT Refinement

Hi,

does cisTEM have any functionalities for microtubule processing, specifically, or helical processing, in general?

Most published methods rely on EMAN and FREALIGN to do the bulk of the processing for MTs, so I was wondering how much, if any, of this functionality is baked into cisTEM.

Thanks!

Rick

ruben

MT and helical refinement

Hi Rick,

There is no specific functionality for helices in cisTEM at the moment (unless they did it last night). However, I have been able to use it quite successfully for TMV (yes, I know, TMV is trivial). The way it has worked nicely for me is to migrate the frealign files (which implies that you have done your particle picking outside of cisTEM) as a refinement package (as a consistency test, make sure that your theta angles are close to 90 or 270), and then refine the structure without imposing symmetry (C1). You can impose the helical symmetry externally at the end. To calculate the FSC, you can generate a 3D reconstruction in cisTEM, and specify that you want to save the two half maps. Then also impose the helical symmetry on each of the half maps and use the program calculate_fsc with the two symmetrized maps. I got a nice improvement doing it this way over the map obtained with Frealign (which was already quite nice)

Ruben.

Rick_Baker

Thanks! I'll give this a try.

Source URL:https://cistem.org/mt-refinement