

EMAN

Tutorial Session #3

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Evaluating a Reconstruction
Difficult Particles
Database Demo



Evaluate Reconstruction

- *cd ~/demo/groel/stage5*
- *eman*
- Analysis -> Convergence (2.7 Å/pix)
 threed.?a.mrc or x?.mrc
- 'Euler' Tab
 classes..hed*
- 'Compare Images' Tab
 classes..hed, cls*.lst*

Almost Symmetric

- *cd ~/demo/tough_cases/almost_symmetric/generate*
- *proc3d ../.././BTV/generate/bvp.ra.mrc orig1.mrc clip=56,56,56*
- *compare orig1.mrc orig.mrc*
- *examine results in ../noise0, ../noise2 and ../noise1*

Heterogeneity

- *cd /obelix/demo/tough_cases/heterogeneity/step1*
- have a look
- *cd /obelix/demo/tough_cases/heterogeneity/step2*
- look at 0/threed.*.mrc and 1/threed.*.mrc
- *cd 0*
- *for i in classes.<1-16>.hed*
- *iminfo \$i all |grep raw*
- *end*

Asymmetric Particles

- `cd ~/demo/tough_cases/asymmetric/KIF/stage2`
- Check initial model, observe convergence
- Is the model correct ?
- Check `../generate`
- Check `../stage2a` and `../stage2b`

Dn Tricks and Traps

- EMAN (any non CCL based) algorithm susceptible to 'equatorial drift' in Dn symmetry when high noise levels are present
- *cd ~/demo/groel/stage4a*
- Observe the starting model and the convergence, check Euler tab
- The 'shrink=' option often helps in EMAN
- Also, experimental 'collapse=' option can knock things back into place
- Currently researching better solutions

EMEN Database

(Electron Microscopy Electronic Notebook)

- *cd ~/zope/zopeServer*
- *./start*
- In web browser open:
- *http://127.0.0.1:8080/*
- Select database, username *demo*, password *demo*
- *Administrative interface: http://127.0.0.1:8080/manage*
- *username admin, password admin*
- *cd ~/pydb*
- *pydb.py*