



Full wwPDB EM Validation Report ⓘ

Oct 24, 2024 – 11:15 AM EDT

EMDB ID : EMD-44427
Title : Cargo-loaded Myxococcus xanthus EncA encapsulin engineered pore mutant
with T=4 icosahedral symmetry
Authors : Andreas, M.P.; Kwon, S.; Giessen, T.W.
Deposited on : 2024-04-08
Resolution : 3.46 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMMapValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

EMDB validation analysis : 0.0.1.dev113
Validation Pipeline (wwPDB-VP) : 2.39

1 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, I	Depositor
Number of particles used	4386	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	Not provided	
Microscope	FEI TECNAI ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/\text{\AA}^2$)	39.56	Depositor
Minimum defocus (nm)	1.0	Depositor
Maximum defocus (nm)	1.8	Depositor
Magnification	45000.0	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.674	Depositor
Minimum map value	-0.279	Depositor
Average map value	0.008	Depositor
Map value standard deviation	0.054	Depositor
Recommended contour level	0.13	Depositor
Map size (\AA)	509.60004, 509.60004, 509.60004	wwPDB
Map dimensions	440, 440, 440	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.1581819, 1.1581819, 1.1581819	Depositor

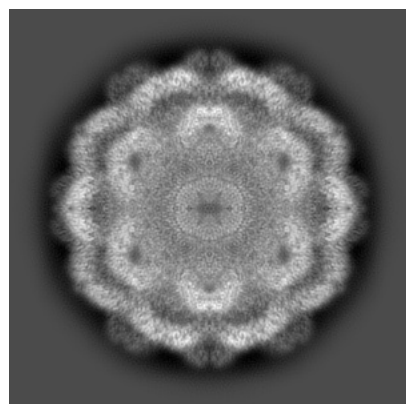
2 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-44427. These allow visual inspection of the internal detail of the map and identification of artifacts.

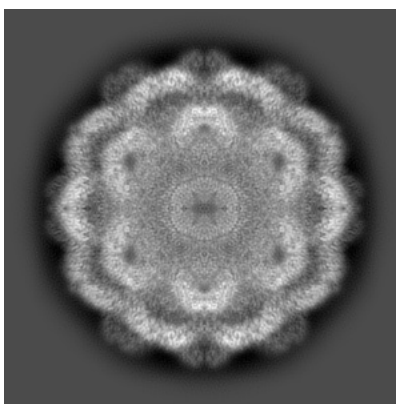
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

2.1 Orthogonal projections [i](#)

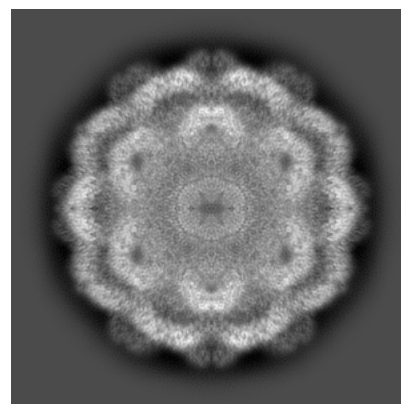
2.1.1 Primary map



X

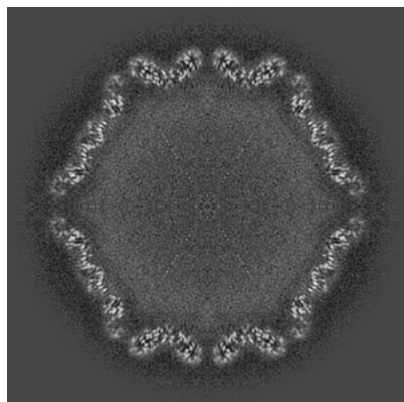


Y

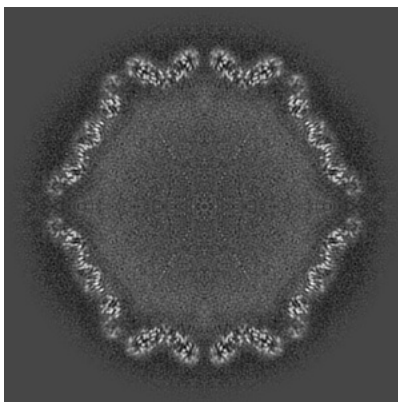


2.2 Central slices [i](#)

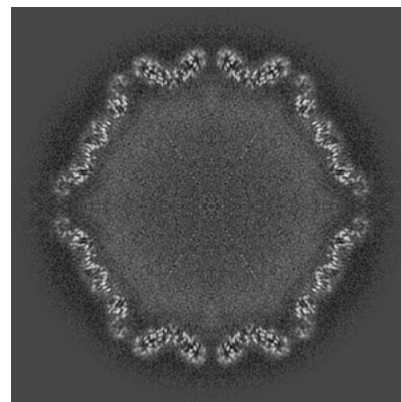
2.2.1 Primary map



X Index: 220

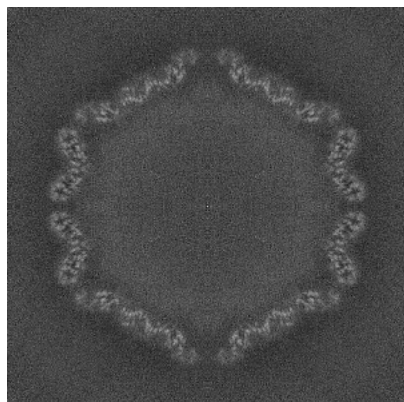


Y Index: 220



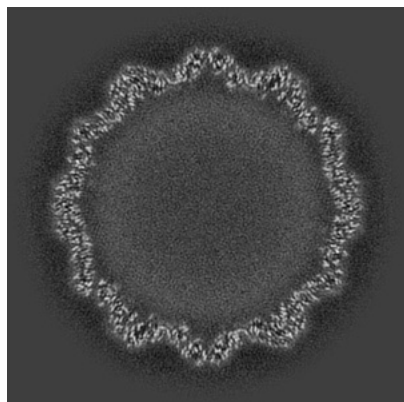
Z Index: 220

2.2.2 Raw map

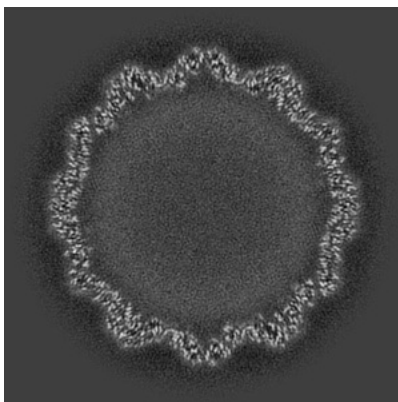


2.3 Largest variance slices [i](#)

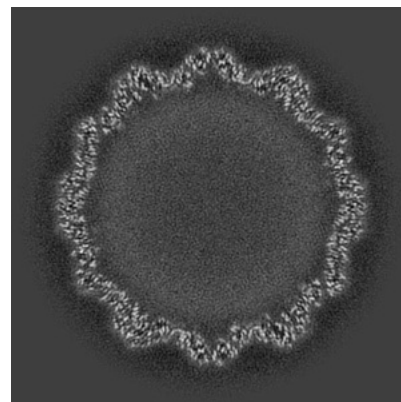
2.3.1 Primary map



X Index: 241

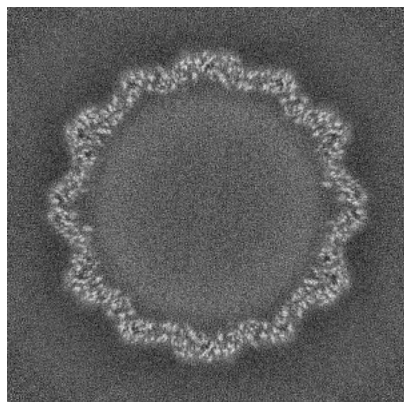


Y Index: 199



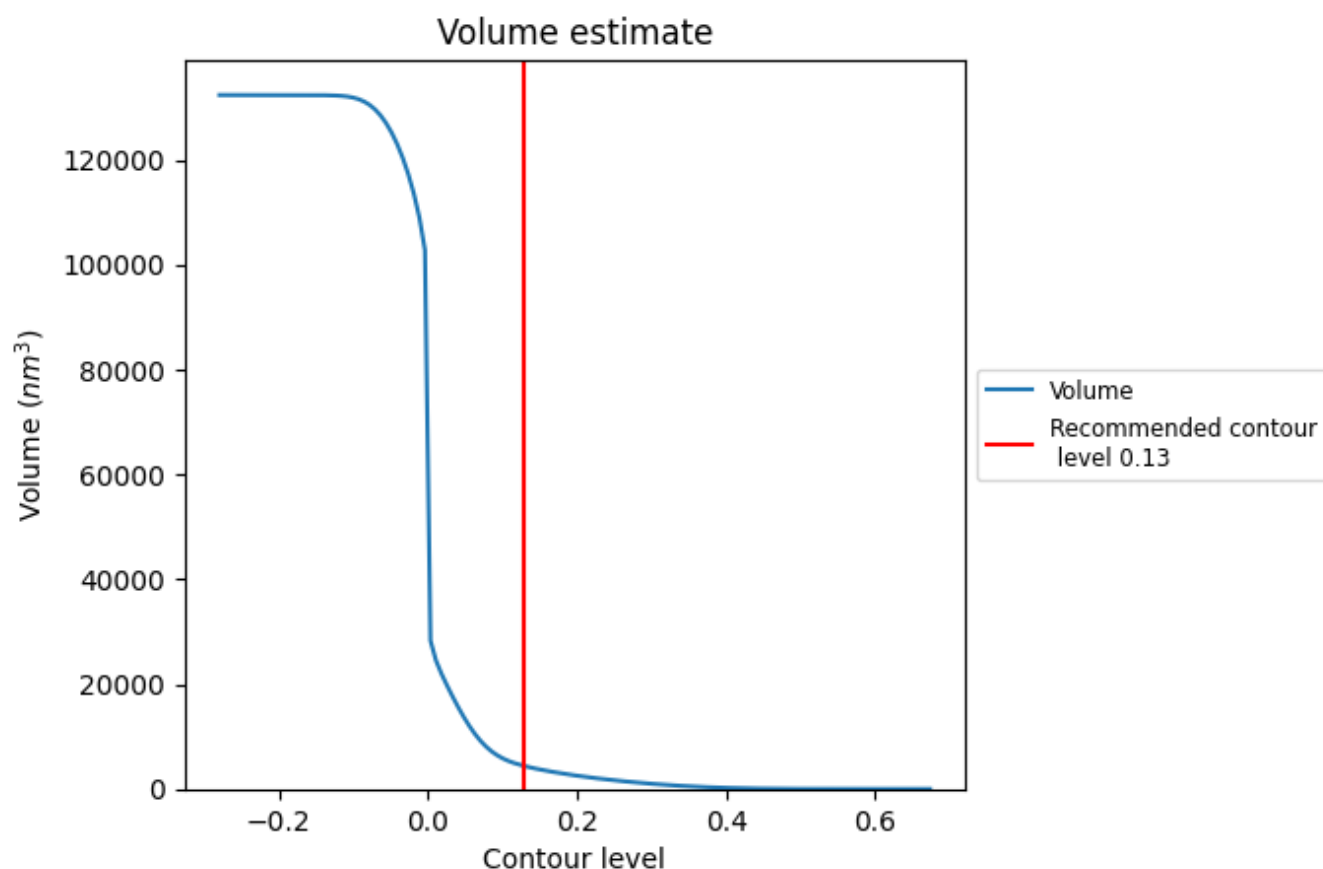
Z Index: 199

2.3.2 Raw map



X Index: 242

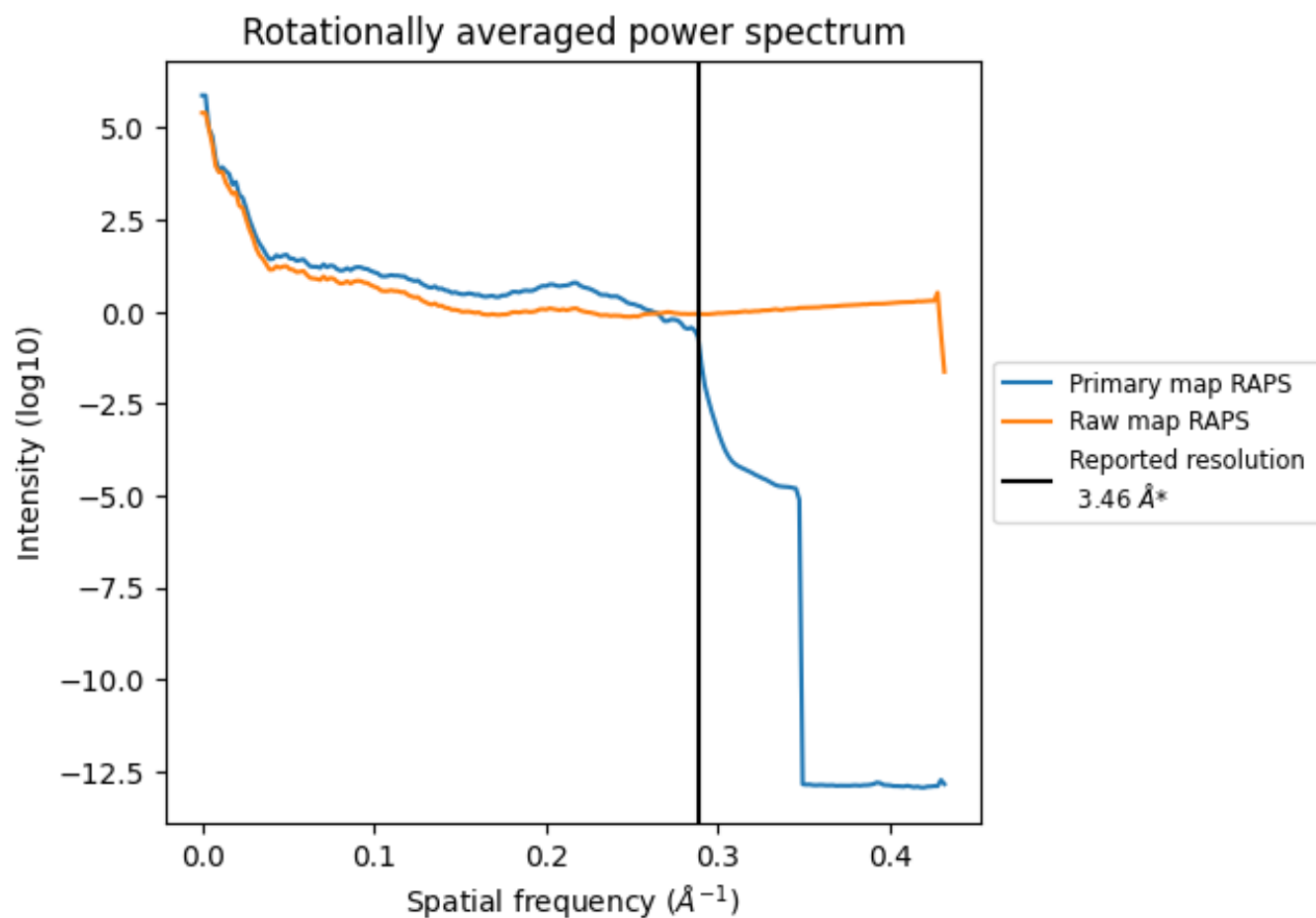
3.2 Volume estimate [i](#)



The volume at the recommended contour level is 4356 nm³; this corresponds to an approximate mass of 3935 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

3.3 Rotationally averaged power spectrum ⓘ

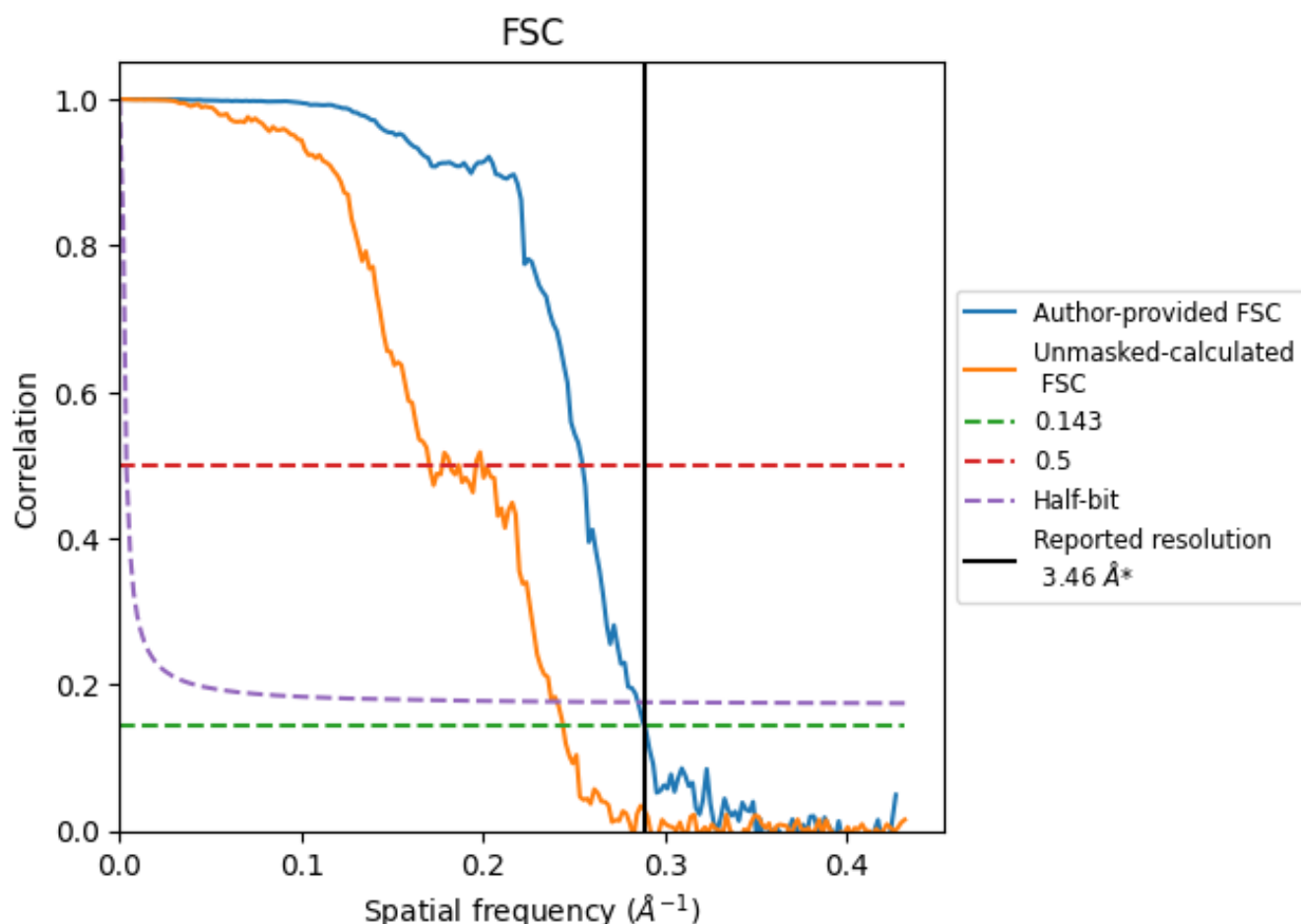


*Reported resolution corresponds to spatial frequency of 0.289 Å⁻¹

4 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

4.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.289 \AA^{-1}

4.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.46	-	-
Author-provided FSC curve	3.47	3.93	3.51
Unmasked-calculated*	4.10	5.87	4.16

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.10 differs from the reported value 3.46 by more than 10 %