wwPDB X-ray Structure Validation Summary Report (i)

Mar 16, 2026 – 02:14 PM JST

PDB ID	:	9U4X / pdb_00009u4x
Title	:	Crystal Structure of Alcohol Dehydrogenase from Anoxybacillus geothermalis D9
Authors	:	Riem, E.A.A.; Kamarudin, N.H.A.; Ali, M.S.M.; Noor, N.D.M.
Deposited on	:	2025-03-20
Resolution	:	2.70 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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/XrayValidationReportHelp
with specific help available everywhere you see the (i) 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 (1)) were used in the production of this report:

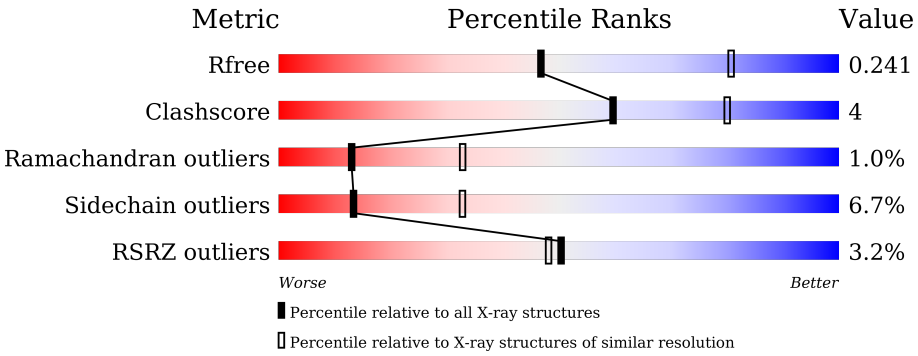
MolProbity	:	4-5-2 with Phenix2.0
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.48.1

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.70 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	3333 (2.70-2.70)
Clashscore	180529	3684 (2.70-2.70)
Ramachandran outliers	177936	3633 (2.70-2.70)
Sidechain outliers	177891	3633 (2.70-2.70)
RSRZ outliers	164620	3333 (2.70-2.70)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	337	84% 12%
1	B	337	4% 85% 12%
1	C	337	2% 81% 16%
1	D	337	3% 83% 13%
1	E	337	4% 85% 12%
1	F	337	4% 84% 13%

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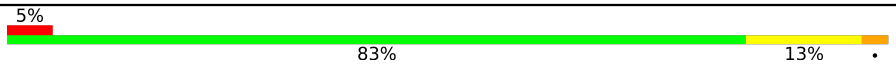
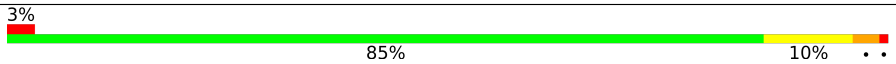
Mol	Chain	Length	Quality of chain
1	G	337	
1	H	337	

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 40614 atoms, of which 20216 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Alcohol dehydrogenase.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	337	Total	C	H	N	O	S	0	0	0
			5059	1617	2527	430	471	14			
1	B	337	Total	C	H	N	O	S	0	0	0
			5059	1617	2527	430	471	14			
1	C	337	Total	C	H	N	O	S	0	0	0
			5059	1617	2527	430	471	14			
1	D	337	Total	C	H	N	O	S	0	0	0
			5059	1617	2527	430	471	14			
1	E	337	Total	C	H	N	O	S	0	0	0
			5059	1617	2527	430	471	14			
1	F	337	Total	C	H	N	O	S	0	0	0
			5059	1617	2527	430	471	14			
1	G	337	Total	C	H	N	O	S	0	0	0
			5059	1617	2527	430	471	14			
1	H	337	Total	C	H	N	O	S	0	0	0
			5059	1617	2527	430	471	14			

- Molecule 2 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	2	Total	Zn	0	0
			2	2		
2	B	2	Total	Zn	0	0
			2	2		
2	C	2	Total	Zn	0	0
			2	2		
2	D	2	Total	Zn	0	0
			2	2		
2	E	2	Total	Zn	0	0
			2	2		
2	F	2	Total	Zn	0	0
			2	2		

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	G	2	Total Zn 2 2	0	0
2	H	2	Total Zn 2 2	0	0

- Molecule 3 is water.

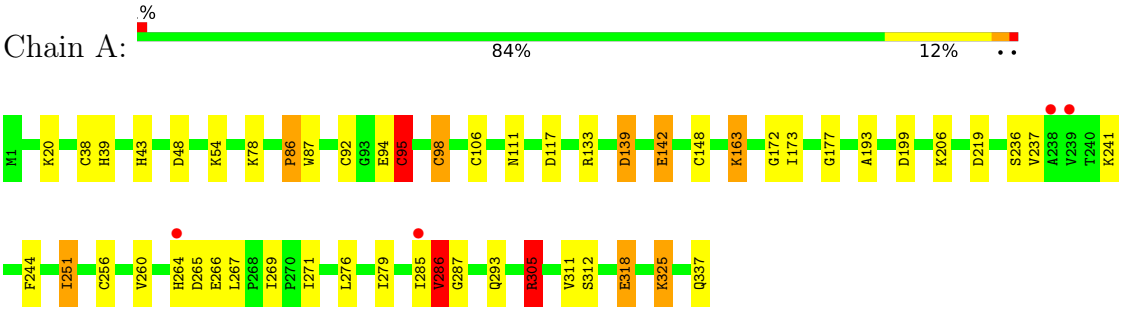
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	19	Total O 19 19	0	0
3	B	14	Total O 14 14	0	0
3	C	25	Total O 25 25	0	0
3	D	11	Total O 11 11	0	0
3	E	14	Total O 14 14	0	0
3	F	12	Total O 12 12	0	0
3	G	11	Total O 11 11	0	0
3	H	20	Total O 20 20	0	0

3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

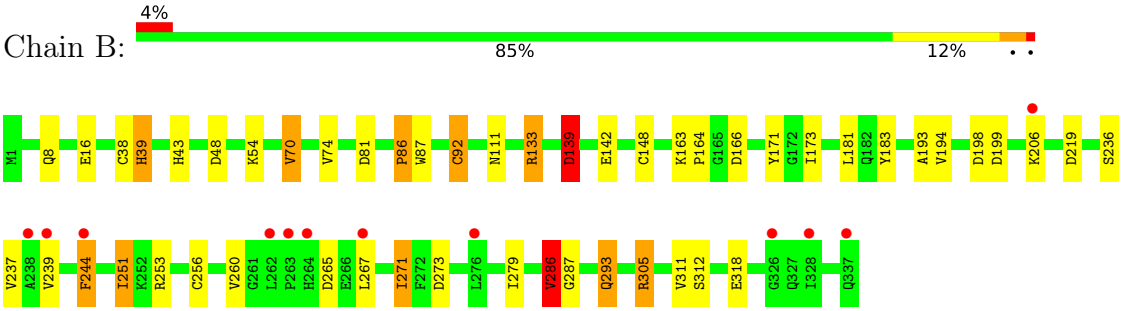
• Molecule 1: Alcohol dehydrogenase

Chain A:



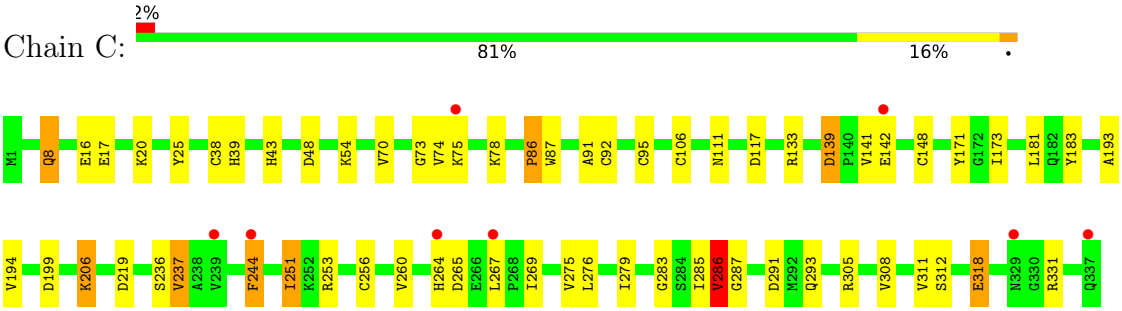
• Molecule 1: Alcohol dehydrogenase

Chain B:



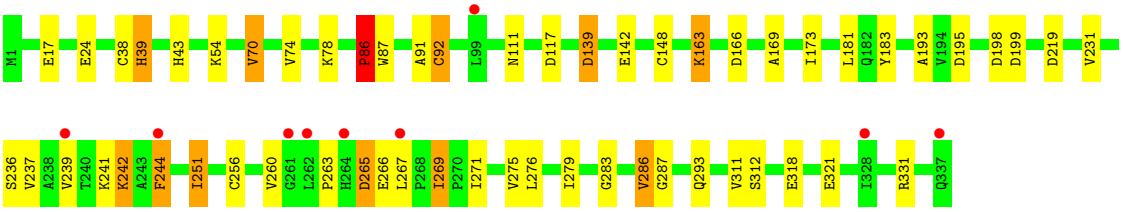
• Molecule 1: Alcohol dehydrogenase

Chain C:

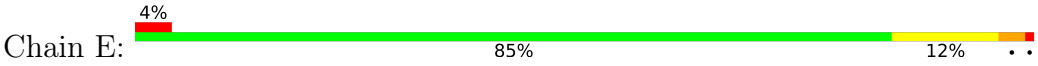


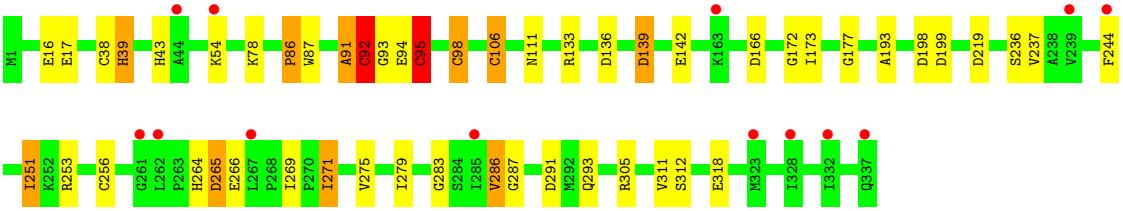
• Molecule 1: Alcohol dehydrogenase

Chain D:

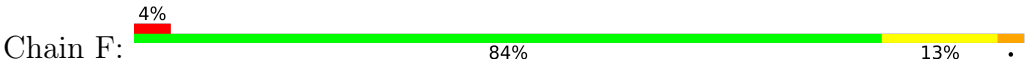


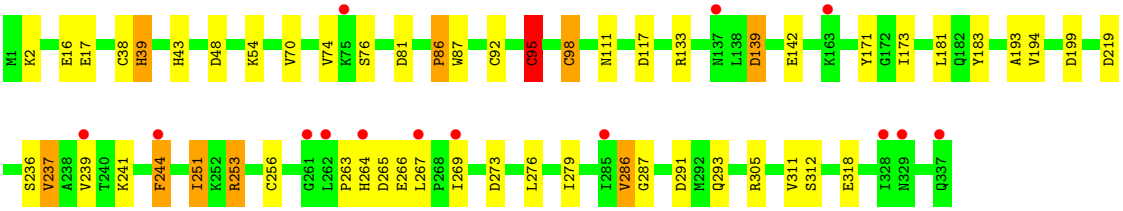
• Molecule 1: Alcohol dehydrogenase



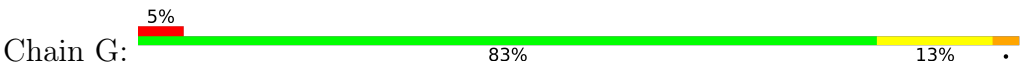


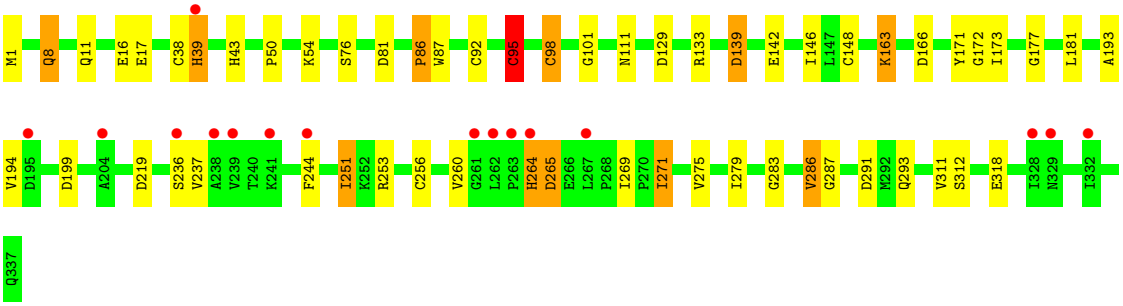
• Molecule 1: Alcohol dehydrogenase



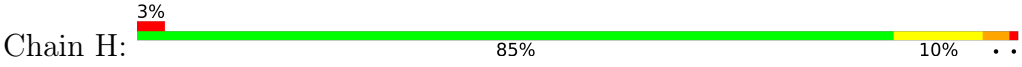


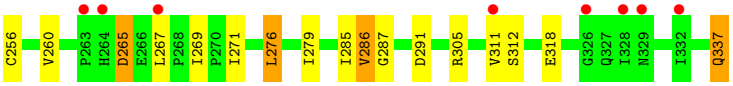
• Molecule 1: Alcohol dehydrogenase





• Molecule 1: Alcohol dehydrogenase




C256
V260
P263
H264
D265
E266
L267
P268
I269
P270
I271
L276
I279
I285
V286
G287
D291
R305
V311
S312
E318
G326
Q327
I328
N329
I332
Q337

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	83.61Å 130.77Å 134.92Å 90.00° 90.70° 90.00°	Depositor
Resolution (Å)	48.97 – 2.70 48.97 – 2.70	Depositor EDS
% Data completeness (in resolution range)	99.9 (48.97-2.70) 99.9 (48.97-2.70)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.14 (at 2.69Å)	Xtriage
Refinement program	REFMAC 5.8.0430 (refmacat 0.4.88)	Depositor
R, R_{free}	0.200 , 0.241 0.200 , 0.241	Depositor DCC
R_{free} test set	4047 reflections (5.08%)	wwPDB-VP
Wilson B-factor (Å^2)	39.7	Xtriage
Anisotropy	0.083	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.36 , 36.8	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	0.002 for -h,l,k 0.012 for -h,-l,-k 0.088 for h,-k,-l	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	40614	wwPDB-VP
Average B, all atoms (Å^2)	46.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 20.81 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 8.0167e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ZN

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	A	0.83	0/2582	1.45	33/3505 (0.9%)
1	B	0.78	0/2582	1.37	27/3505 (0.8%)
1	C	0.82	0/2582	1.39	26/3505 (0.7%)
1	D	0.82	0/2582	1.38	25/3505 (0.7%)
1	E	0.81	0/2582	1.40	26/3505 (0.7%)
1	F	0.83	1/2582 (0.0%)	1.39	22/3505 (0.6%)
1	G	0.80	0/2582	1.38	23/3505 (0.7%)
1	H	0.83	0/2582	1.39	24/3505 (0.7%)
All	All	0.82	1/20656 (0.0%)	1.39	206/28040 (0.7%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	B	0	3
1	C	0	3
1	D	0	1
1	E	0	3
1	F	0	1
1	G	0	1
1	H	0	1
All	All	0	14

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	F	76	SER	CA-CB	-6.59	1.43	1.53

The worst 5 of 206 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	264	HIS	CA-CB-CG	10.39	124.19	113.80
1	A	142	GLU	CB-CA-C	9.91	127.24	110.79
1	E	106	CYS	N-CA-CB	9.24	128.12	109.28
1	A	318	GLU	CB-CG-CD	9.11	128.09	112.60
1	A	325	LYS	CB-CG-CD	9.11	132.25	111.30

There are no chirality outliers.

5 of 14 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	305	ARG	Sidechain
1	B	133	ARG	Sidechain
1	B	253	ARG	Sidechain
1	B	305	ARG	Sidechain
1	C	253	ARG	Sidechain

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2532	2527	2572	22	0
1	B	2532	2527	2571	18	0
1	C	2532	2527	2572	33	0
1	D	2532	2527	2572	23	0
1	E	2532	2527	2572	16	0
1	F	2532	2527	2572	21	0
1	G	2532	2527	2572	21	0
1	H	2532	2527	2571	29	0
2	A	2	0	0	1	0
2	B	2	0	0	0	0
2	C	2	0	0	1	0
2	D	2	0	0	1	0
2	E	2	0	0	0	0
2	F	2	0	0	0	0
2	G	2	0	0	1	0
2	H	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	A	19	0	0	5	0
3	B	14	0	0	7	0
3	C	25	0	0	14	0
3	D	11	0	0	5	0
3	E	14	0	0	1	0
3	F	12	0	0	6	0
3	G	11	0	0	5	0
3	H	20	0	0	12	0
All	All	20398	20216	20574	168	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 4.

The worst 5 of 168 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:106:CYS:HB3	3:H:516:HOH:O	1.16	1.31
1:F:95:CYS:HB2	3:F:505:HOH:O	1.00	1.15
1:A:251:ILE:HG21	3:A:513:HOH:O	1.57	1.03
1:C:142:GLU:HG2	3:C:522:HOH:O	1.59	1.01
1:C:106:CYS:SG	3:C:504:HOH:O	2.23	0.97

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	335/337 (99%)	317 (95%)	15 (4%)	3 (1%)	14	35
1	B	335/337 (99%)	319 (95%)	13 (4%)	3 (1%)	14	35
1	C	335/337 (99%)	316 (94%)	16 (5%)	3 (1%)	14	35

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	D	335/337 (99%)	318 (95%)	14 (4%)	3 (1%)	14	35
1	E	335/337 (99%)	317 (95%)	14 (4%)	4 (1%)	11	28
1	F	335/337 (99%)	316 (94%)	16 (5%)	3 (1%)	14	35
1	G	335/337 (99%)	318 (95%)	14 (4%)	3 (1%)	14	35
1	H	335/337 (99%)	317 (95%)	14 (4%)	4 (1%)	11	28
All	All	2680/2696 (99%)	2538 (95%)	116 (4%)	26 (1%)	13	33

5 of 26 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	92	CYS
1	D	92	CYS
1	E	95	CYS
1	H	92	CYS
1	H	95	CYS

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	268/268 (100%)	246 (92%)	22 (8%)	9	23
1	B	268/268 (100%)	253 (94%)	15 (6%)	17	41
1	C	268/268 (100%)	254 (95%)	14 (5%)	19	44
1	D	268/268 (100%)	249 (93%)	19 (7%)	12	30
1	E	268/268 (100%)	253 (94%)	15 (6%)	17	41
1	F	268/268 (100%)	249 (93%)	19 (7%)	12	30
1	G	268/268 (100%)	247 (92%)	21 (8%)	10	26
1	H	268/268 (100%)	250 (93%)	18 (7%)	13	33
All	All	2144/2144 (100%)	2001 (93%)	143 (7%)	13	33

5 of 143 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	G	163	LYS
1	G	251	ILE
1	H	95	CYS
1	C	286	VAL
1	C	276	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 20 such sidechains are listed below:

Mol	Chain	Res	Type
1	G	190	ASN
1	H	46	HIS
1	H	327	GLN
1	H	293	GLN
1	D	14	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains (i)

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 16 ligands modelled in this entry, 16 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	337/337 (100%)	-0.39	4 (1%)	76	76	14, 35, 74, 104	0
1	B	337/337 (100%)	-0.06	12 (3%)	46	45	22, 44, 96, 141	0
1	C	337/337 (100%)	-0.25	8 (2%)	59	58	17, 36, 81, 140	0
1	D	337/337 (100%)	-0.29	9 (2%)	56	54	17, 36, 85, 117	0
1	E	337/337 (100%)	-0.17	13 (3%)	44	42	19, 41, 92, 146	0
1	F	337/337 (100%)	-0.22	14 (4%)	41	39	19, 37, 84, 131	0
1	G	337/337 (100%)	0.06	16 (4%)	37	35	20, 45, 99, 141	0
1	H	337/337 (100%)	-0.22	11 (3%)	49	47	18, 37, 83, 136	0
All	All	2696/2696 (100%)	-0.19	87 (3%)	50	48	14, 39, 87, 146	0

The worst 5 of 87 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	H	239	VAL	6.3
1	B	267	LEU	5.6
1	E	267	LEU	5.3
1	F	267	LEU	5.2
1	H	244	PHE	5.2

6.2 Non-standard residues in protein, DNA, RNA chains

There are no non-standard protein/DNA/RNA residues in this entry.

6.3 Carbohydrates

There are no oligosaccharides in this entry.

6.4 Ligands (i)

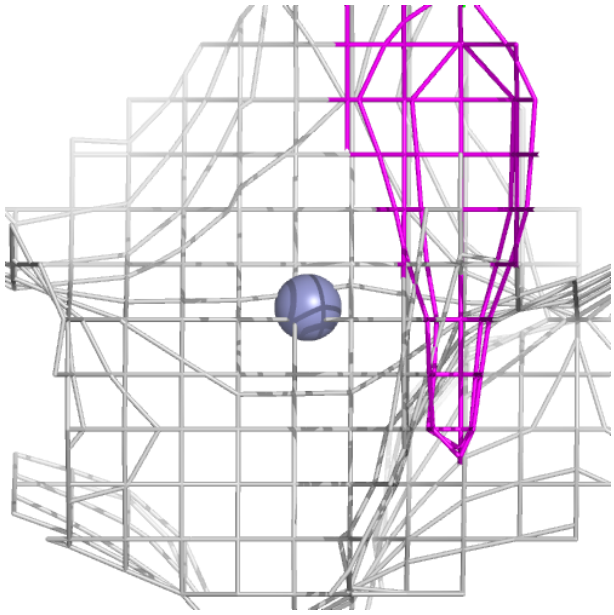
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

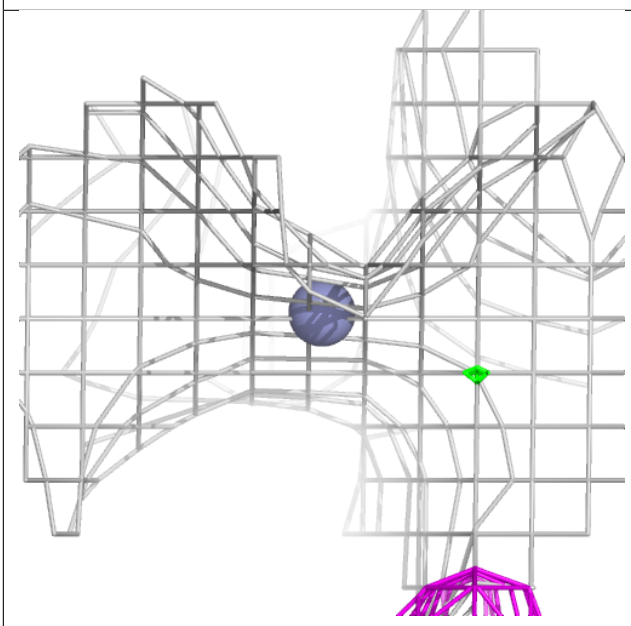
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	ZN	B	402	1/1	0.93	0.16	219,219,219,219	0
2	ZN	A	402	1/1	0.96	0.12	62,62,62,62	0
2	ZN	D	402	1/1	0.97	0.11	102,102,102,102	0
2	ZN	E	402	1/1	0.97	0.04	62,62,62,62	0
2	ZN	G	402	1/1	0.97	0.11	63,63,63,63	0
2	ZN	F	402	1/1	0.98	0.10	61,61,61,61	0
2	ZN	C	402	1/1	0.98	0.10	79,79,79,79	0
2	ZN	H	402	1/1	0.98	0.04	50,50,50,50	0
2	ZN	B	401	1/1	0.99	0.05	44,44,44,44	0
2	ZN	H	401	1/1	0.99	0.03	36,36,36,36	0
2	ZN	G	401	1/1	0.99	0.02	46,46,46,46	0
2	ZN	D	401	1/1	1.00	0.02	43,43,43,43	0
2	ZN	C	401	1/1	1.00	0.05	31,31,31,31	0
2	ZN	E	401	1/1	1.00	0.02	41,41,41,41	0
2	ZN	A	401	1/1	1.00	0.02	37,37,37,37	0
2	ZN	F	401	1/1	1.00	0.02	31,31,31,31	0

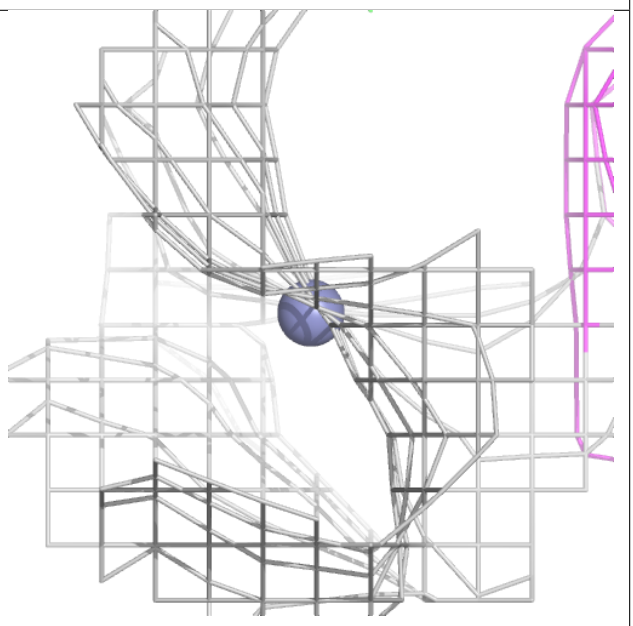
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around ZN B 402:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

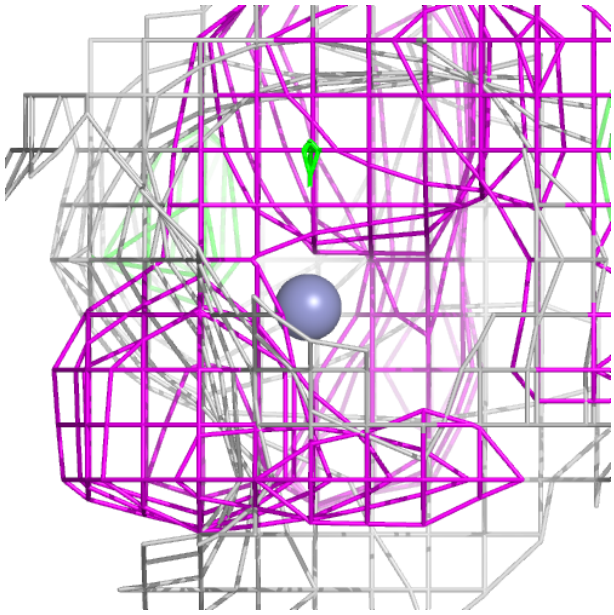


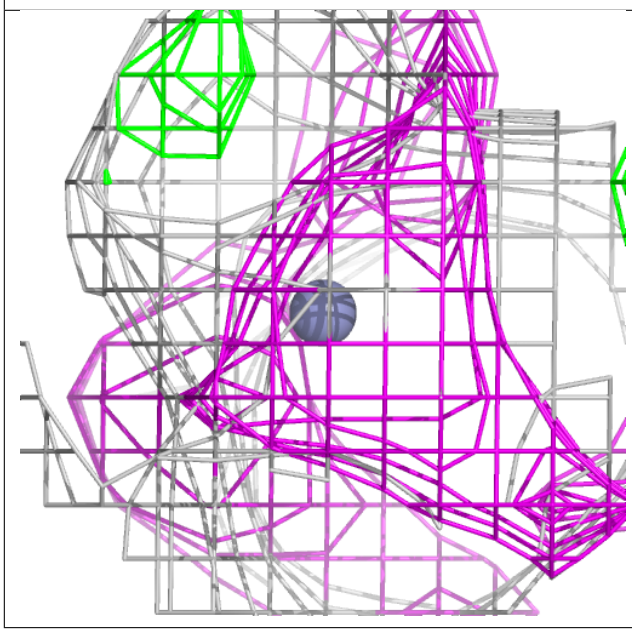


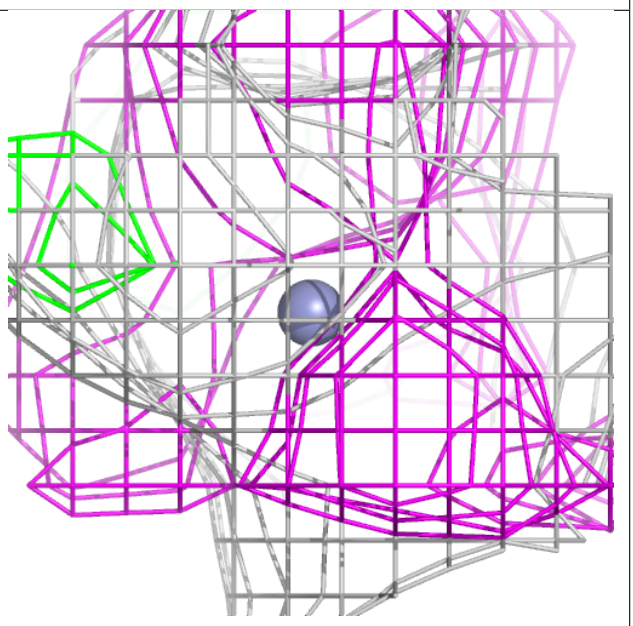


Electron density around ZN A 402:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

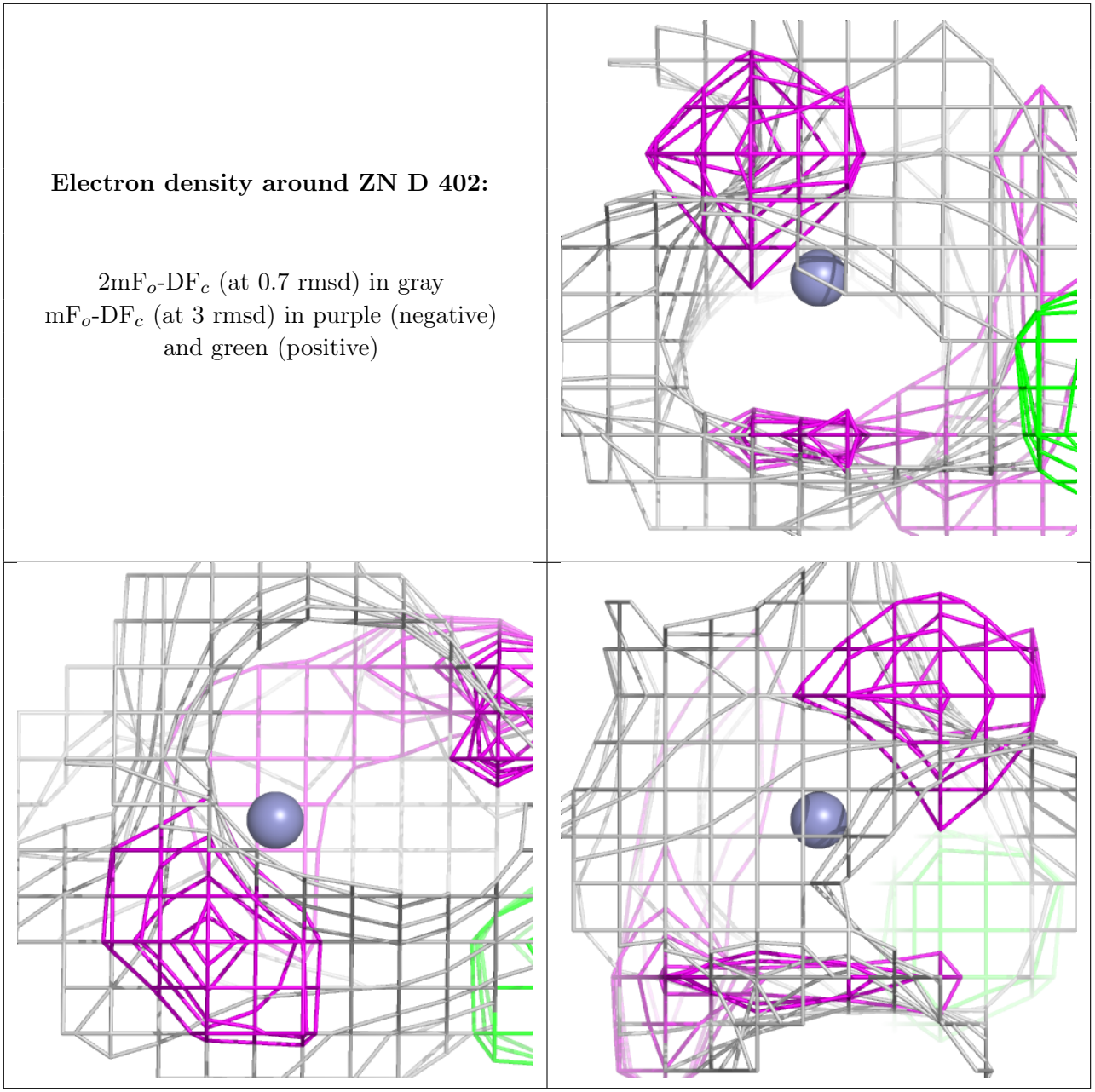






Electron density around ZN D 402:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around ZN E 402:

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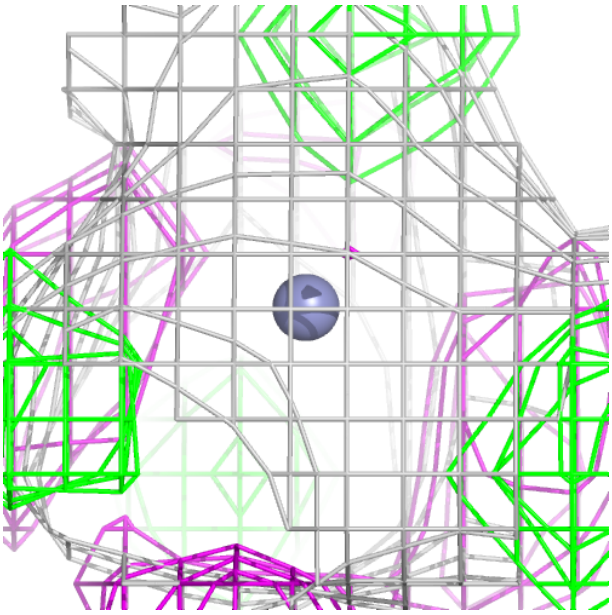
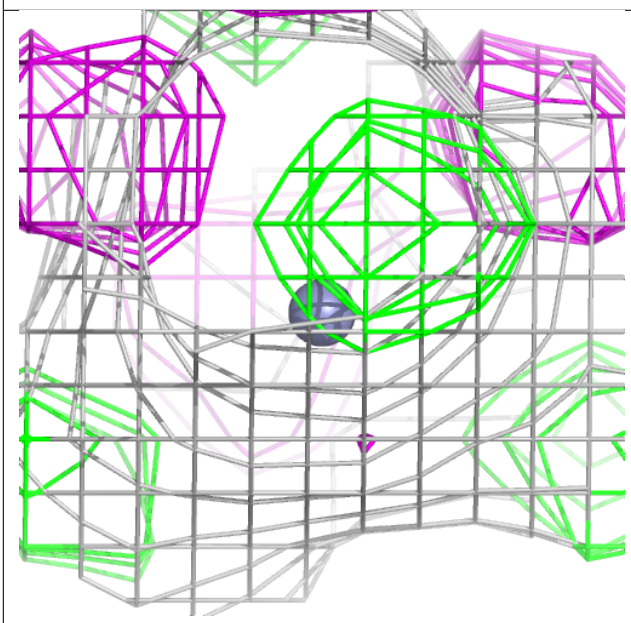
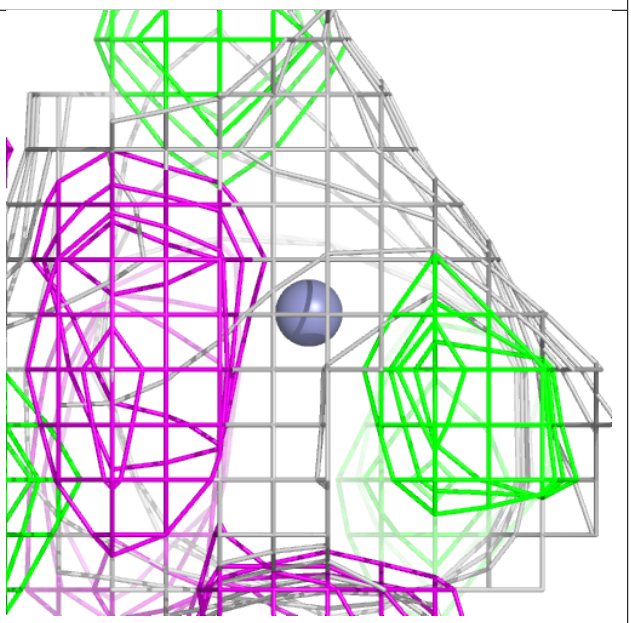
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

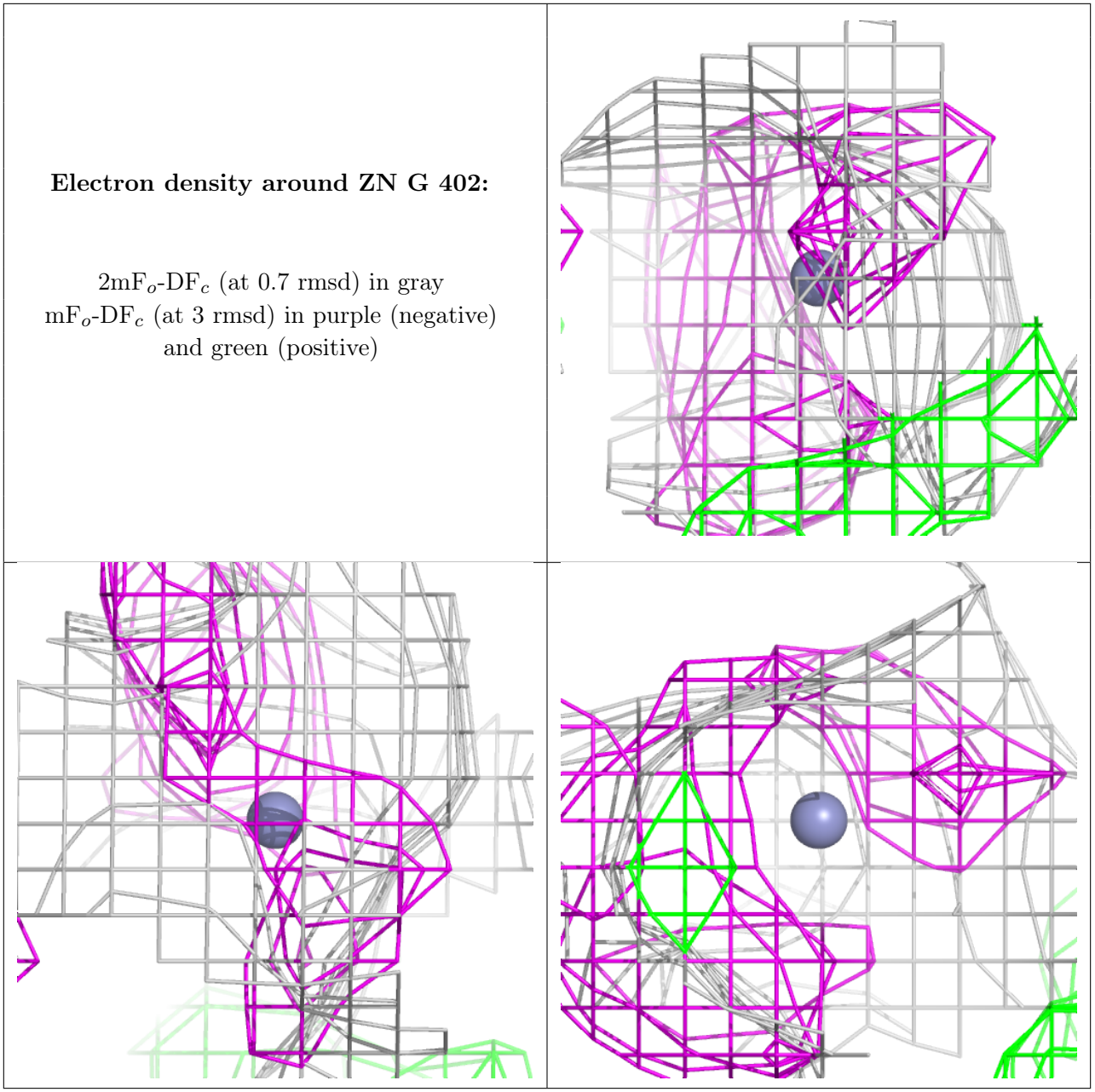






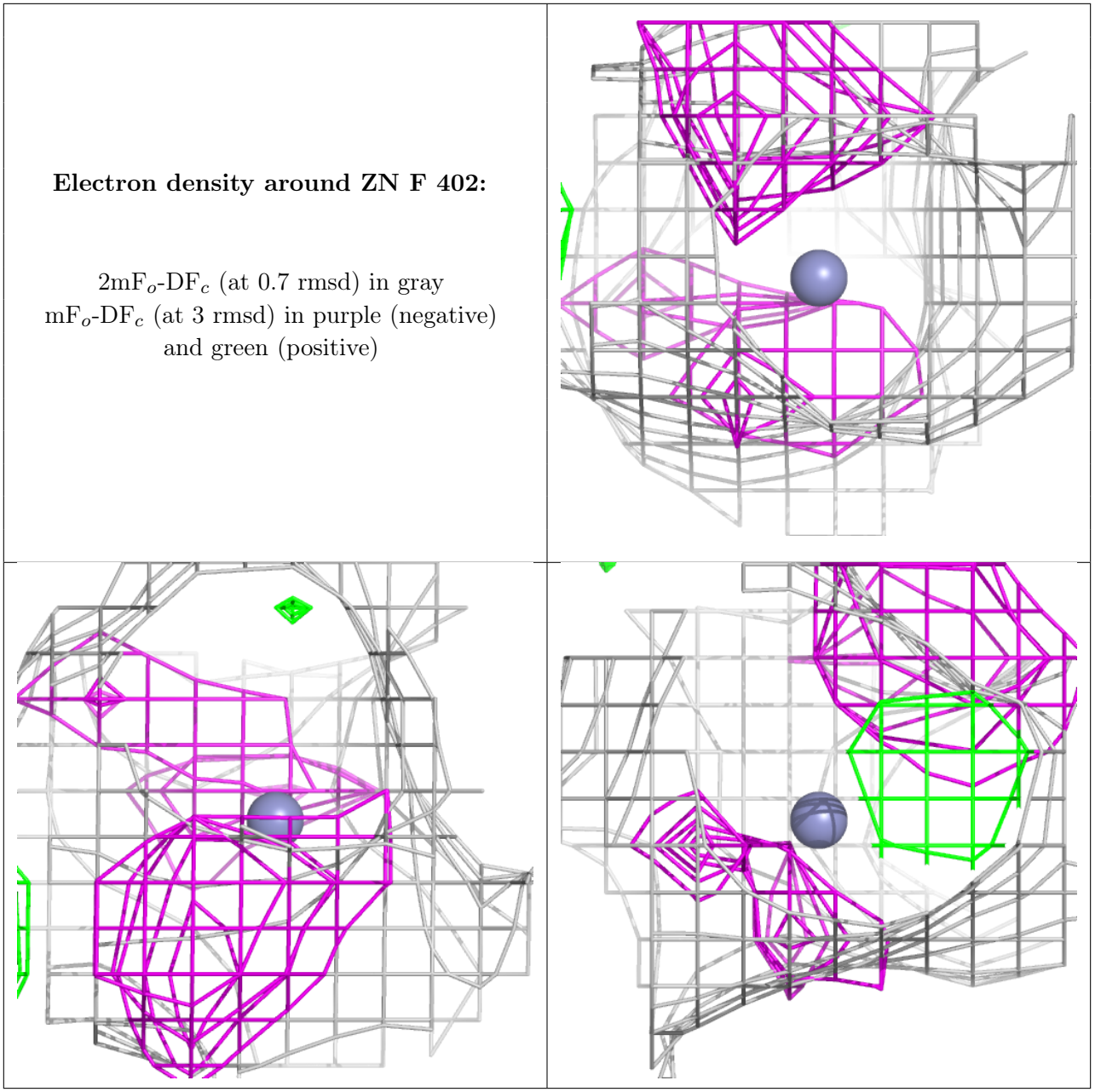
Electron density around ZN G 402:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



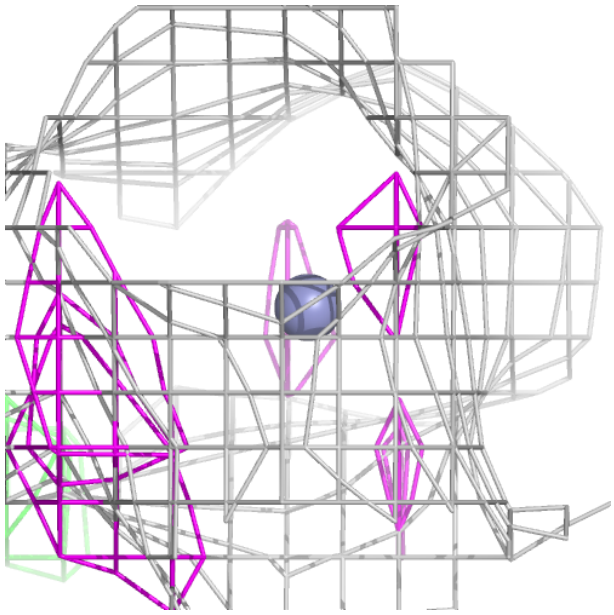
Electron density around ZN F 402:

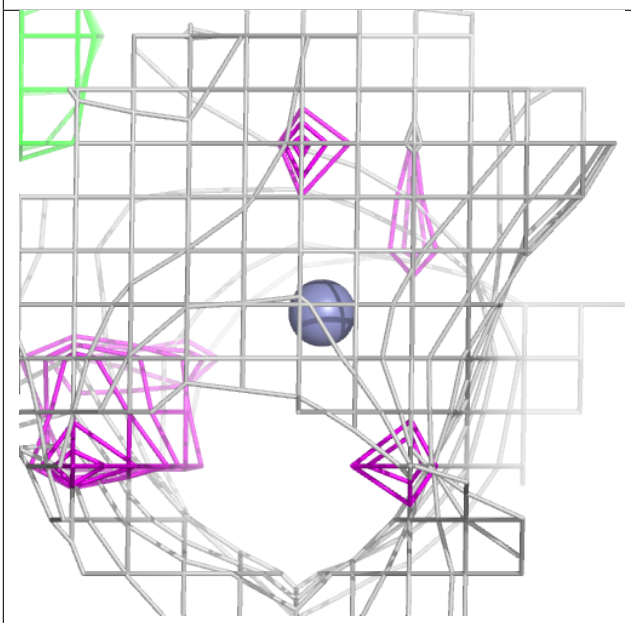
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

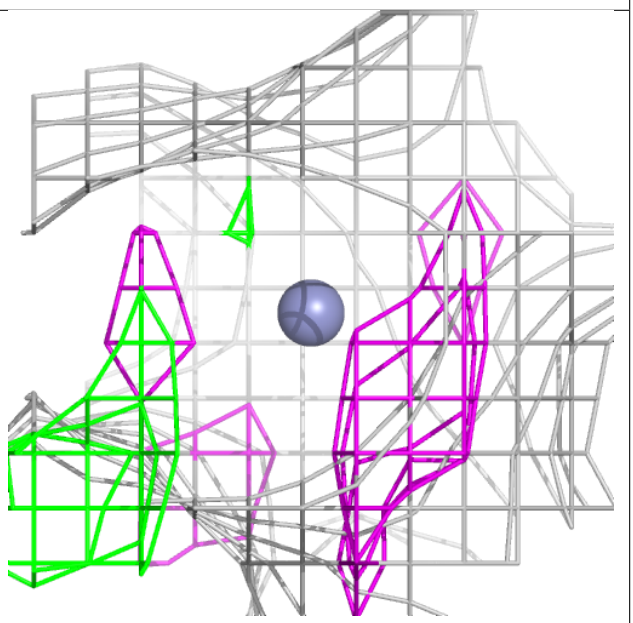


Electron density around ZN C 402:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

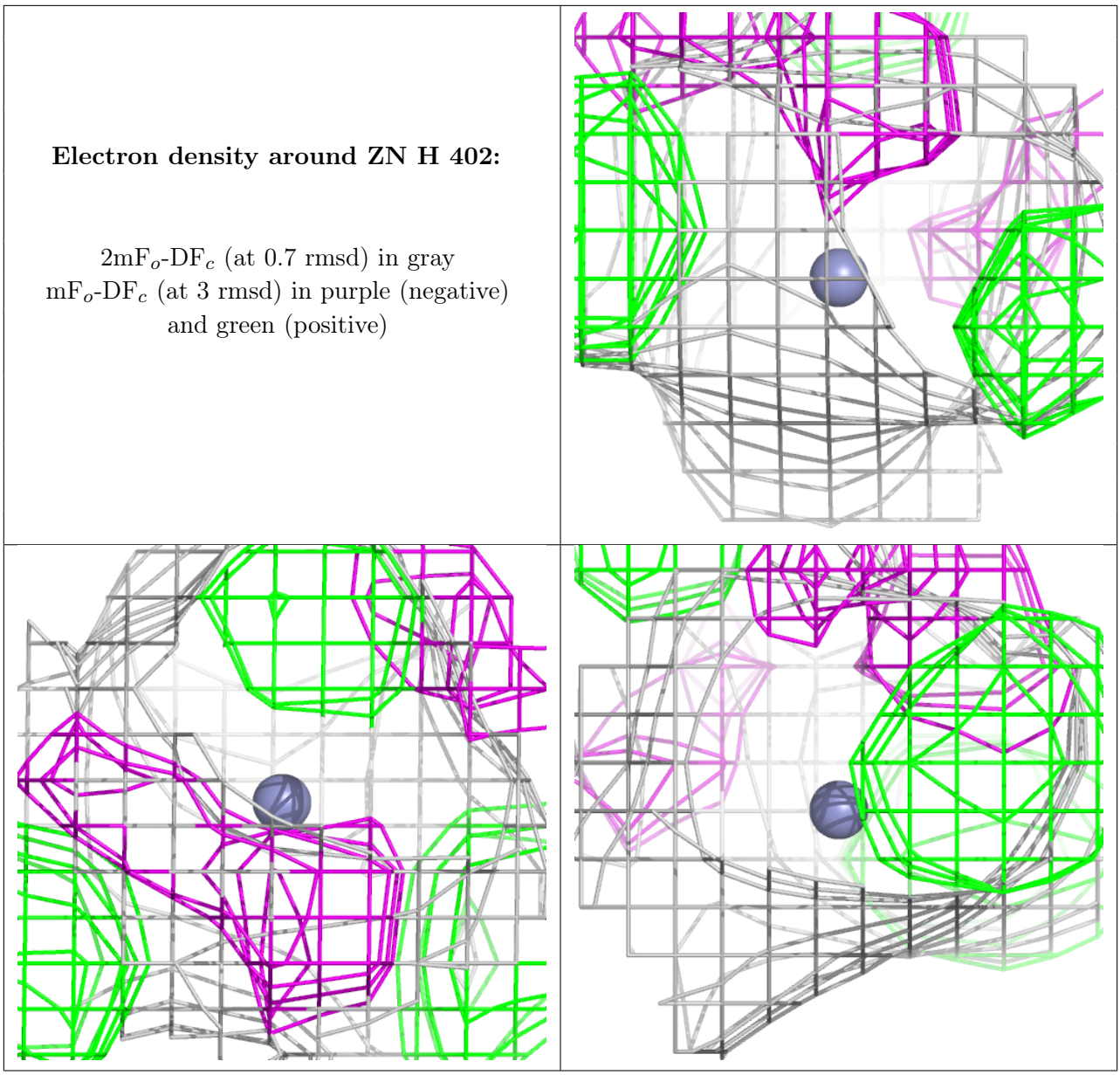






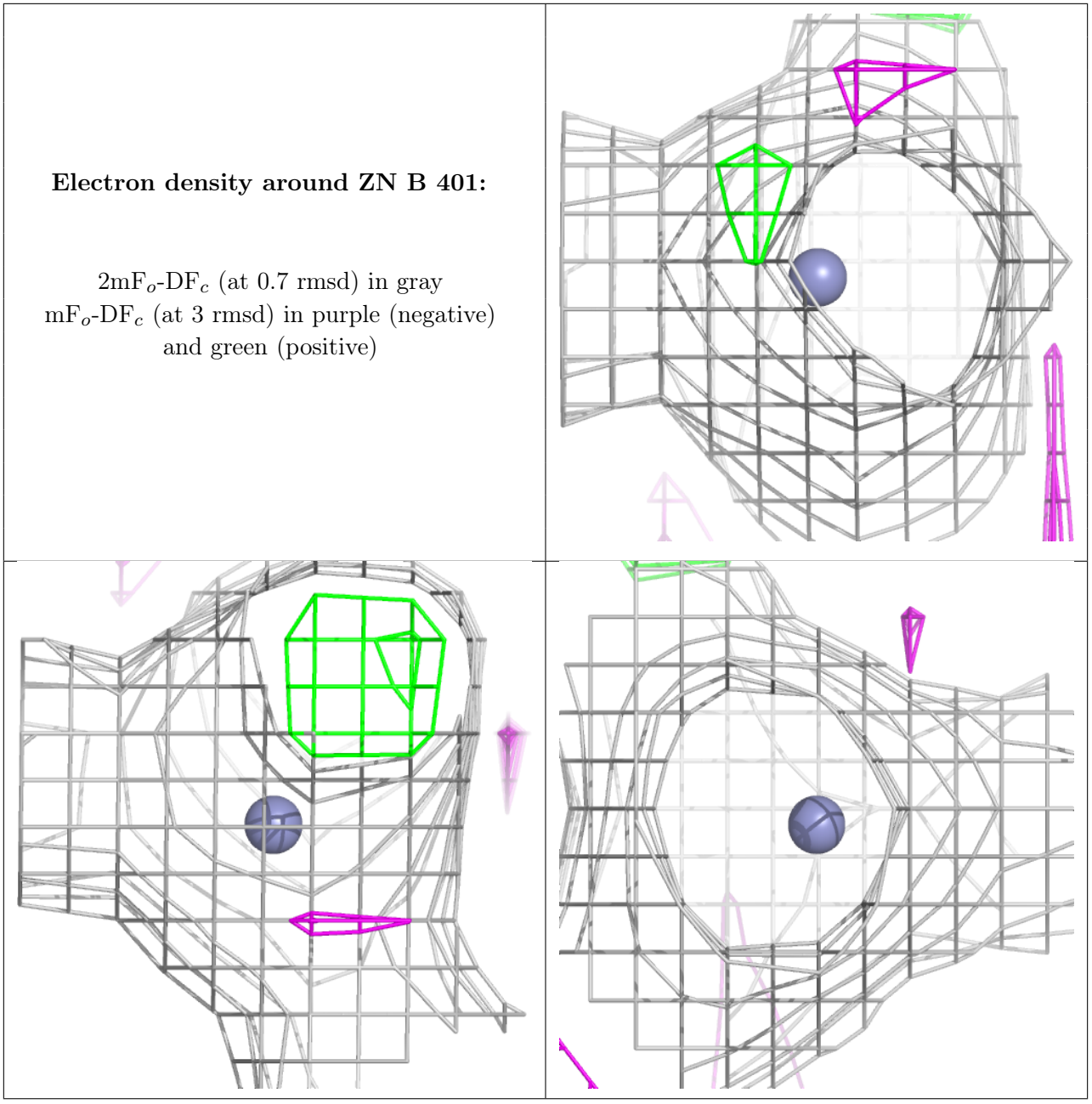
Electron density around ZN H 402:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



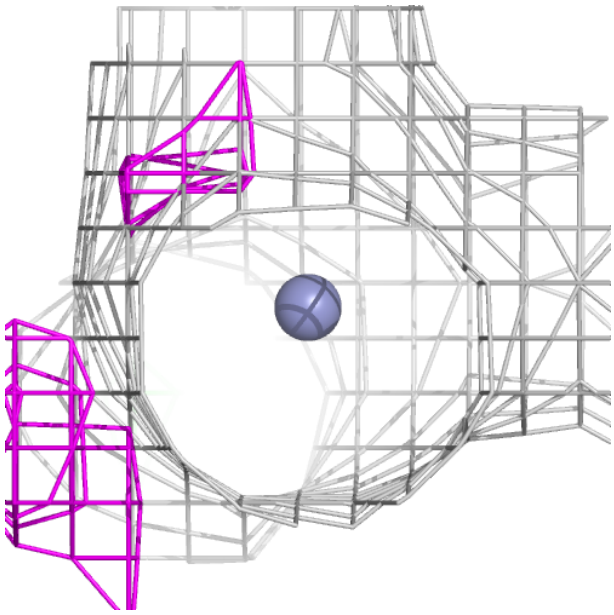
Electron density around ZN B 401:

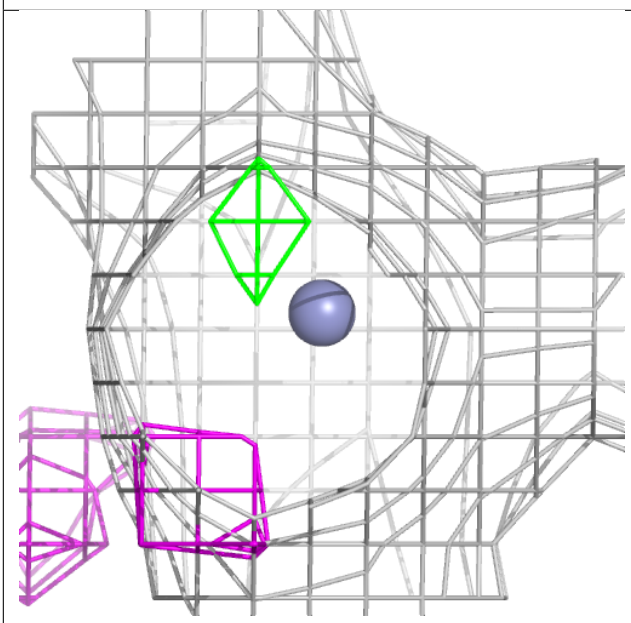
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

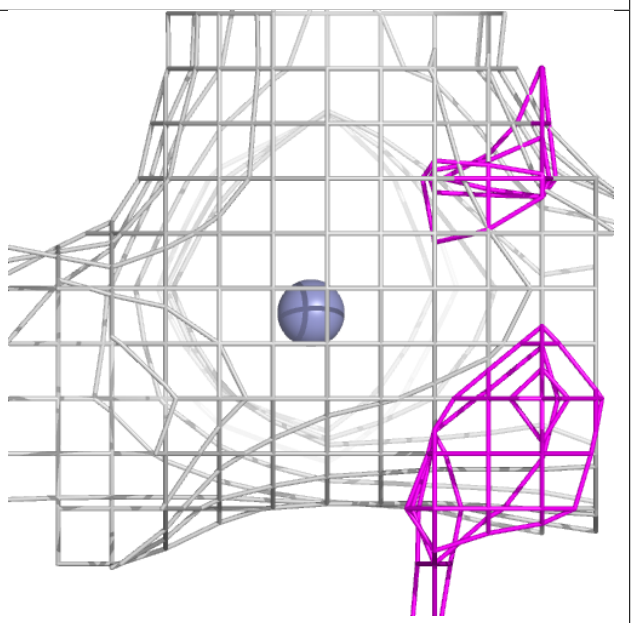


Electron density around ZN H 401:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

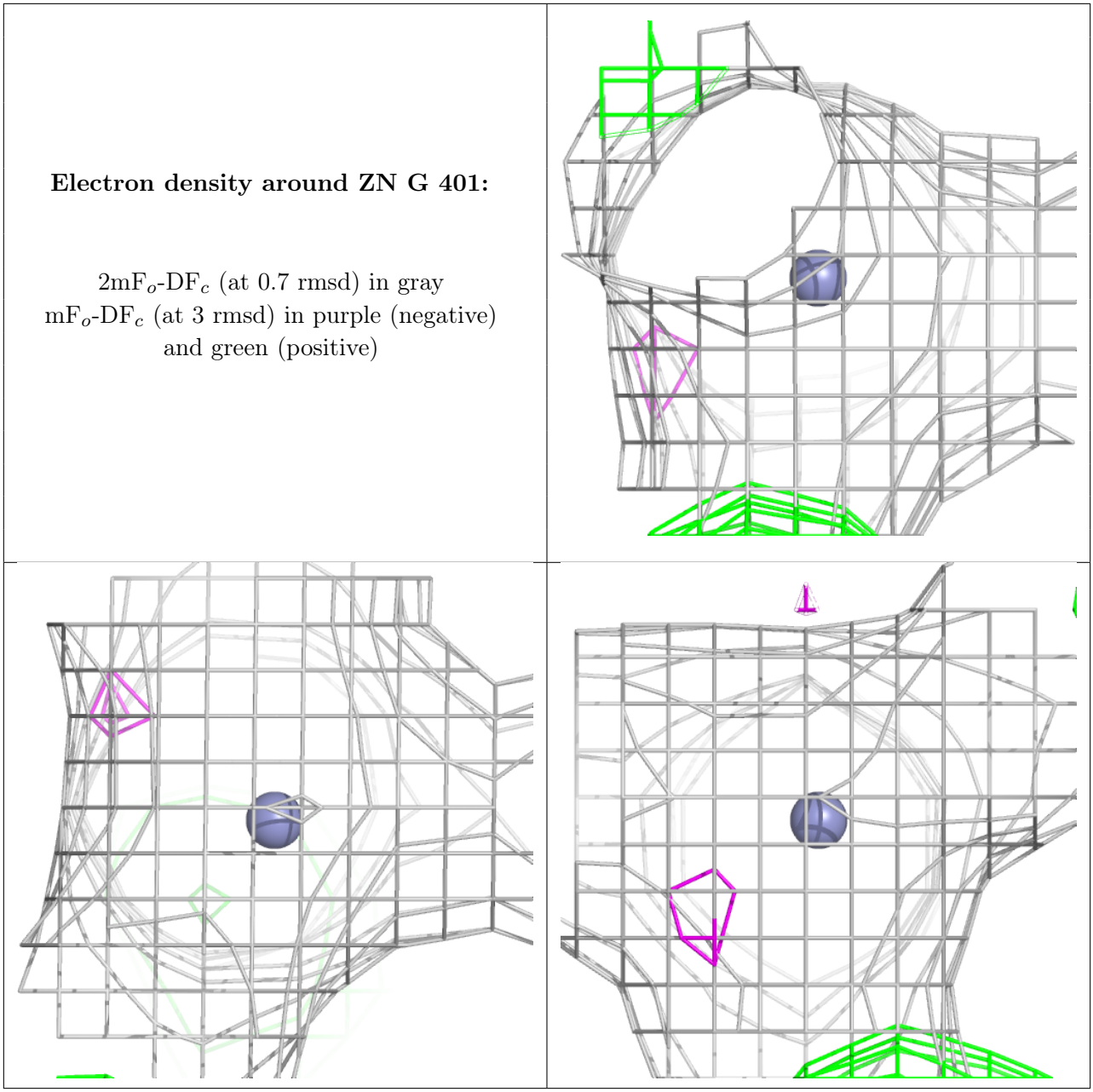






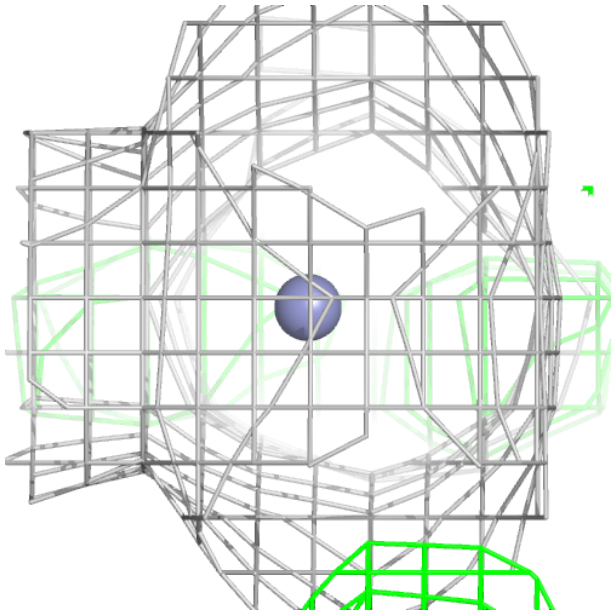
Electron density around ZN G 401:

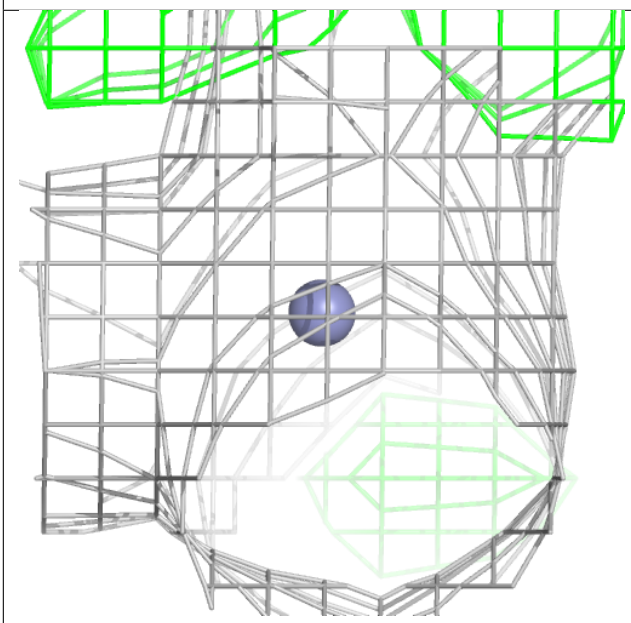
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

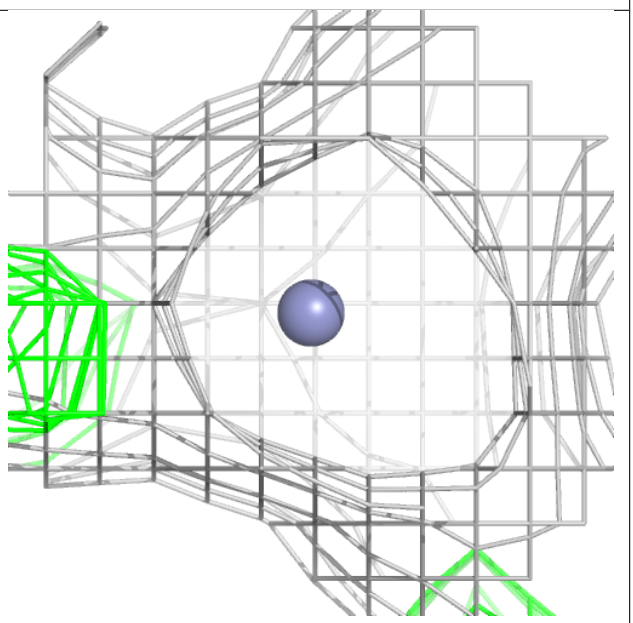


Electron density around ZN D 401:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

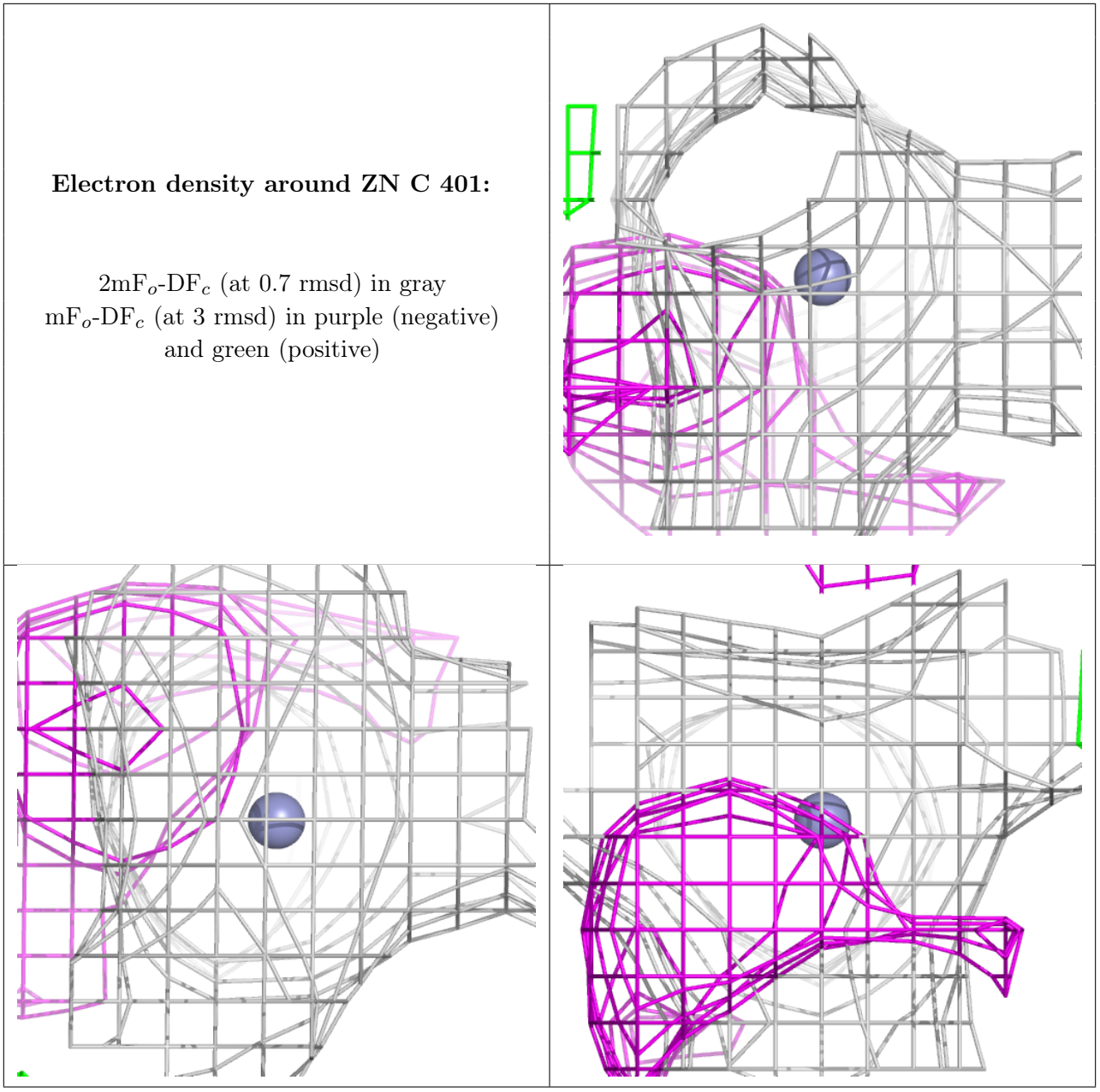






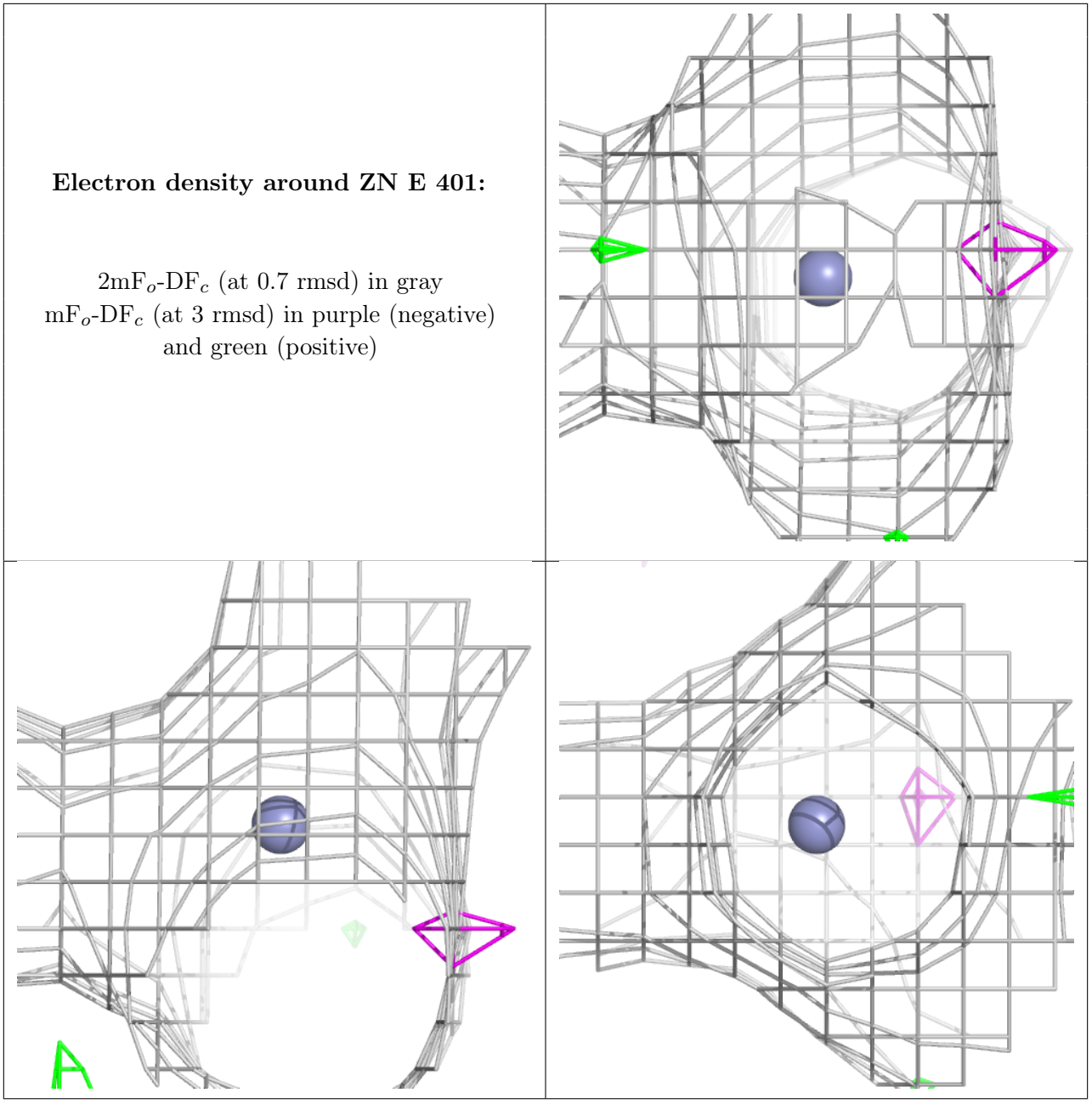
Electron density around ZN C 401:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around ZN E 401:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around ZN A 401:

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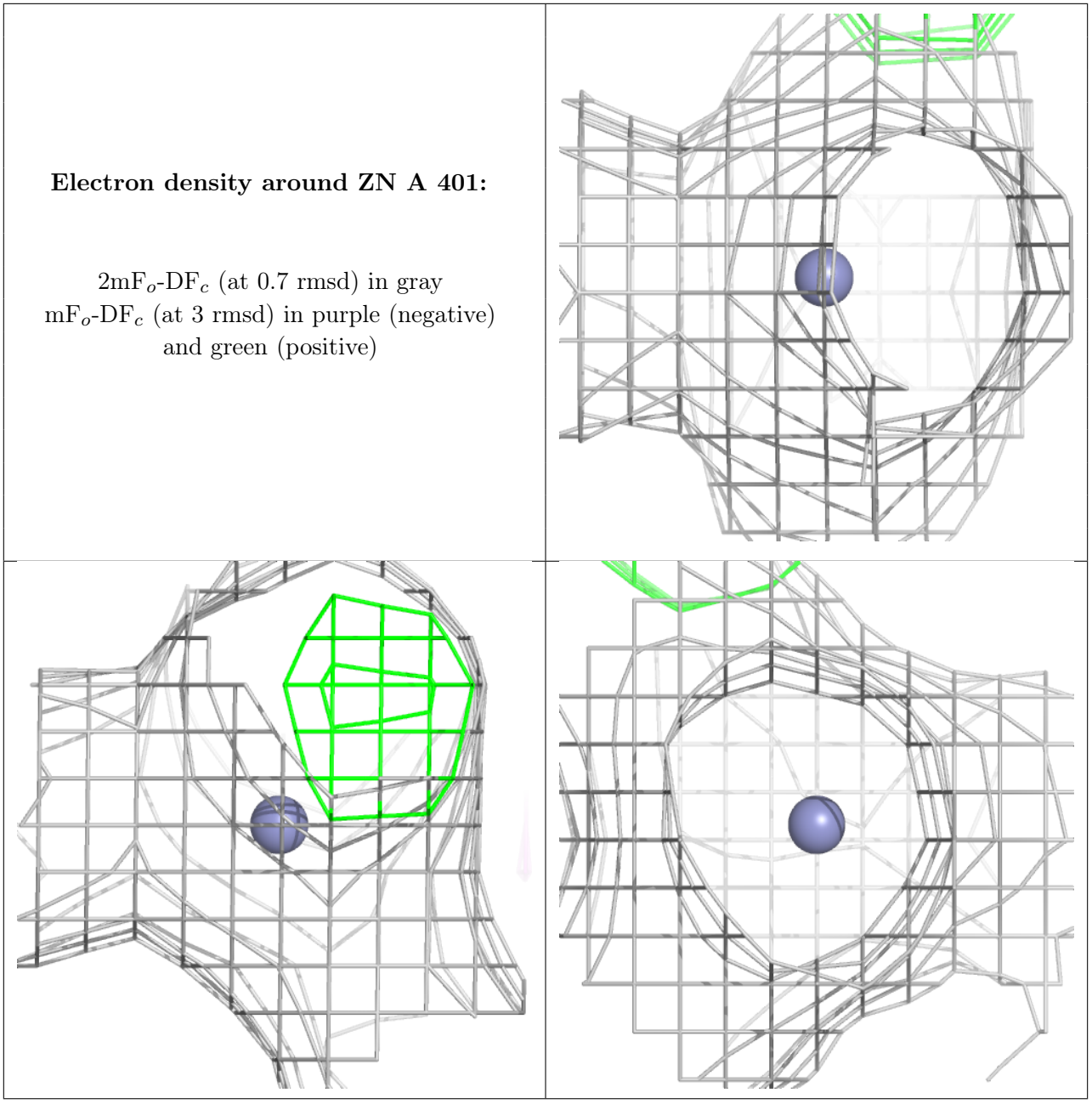
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around ZN F 401:

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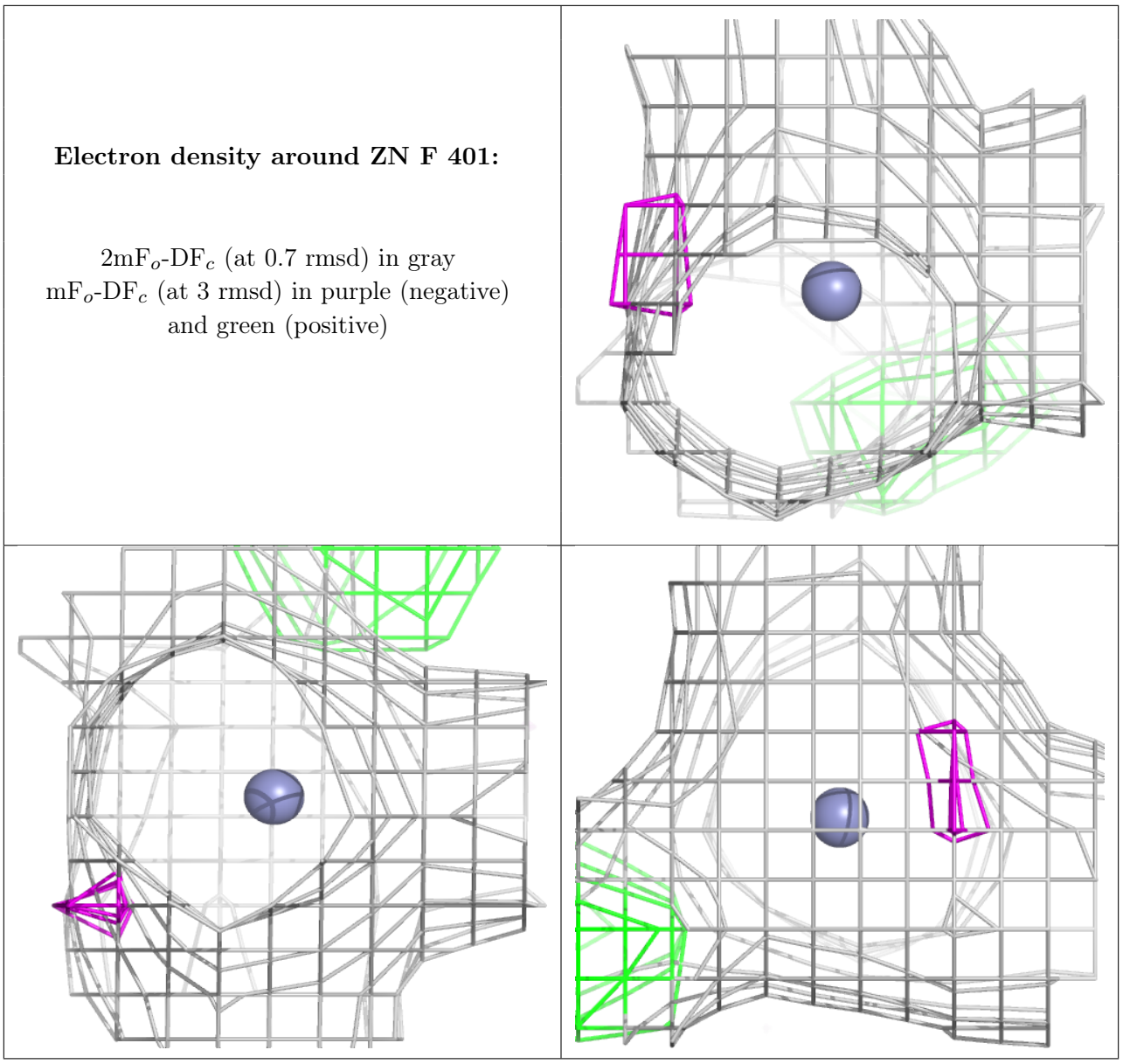
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



6.5 Other polymers

There are no such residues in this entry.