Full wwPDB X-ray Structure Validation Report ⓘ

Apr 7, 2026 – 02:07 PM EDT

PDB ID	:	7HK9 / pdb_00007hk9
Title	:	Crystal Structure of N-methylhydantoinase in complex with ZN2+ and ADPNP
Authors	:	Stihle, M.; Benz, J.; Asztalos, P.; Rudolph, M.G.
Deposited on	:	2024-10-10
Resolution	:	2.58 Å(reported)

This is a Full wwPDB X-ray Structure 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/XrayValidationReportHelp
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:

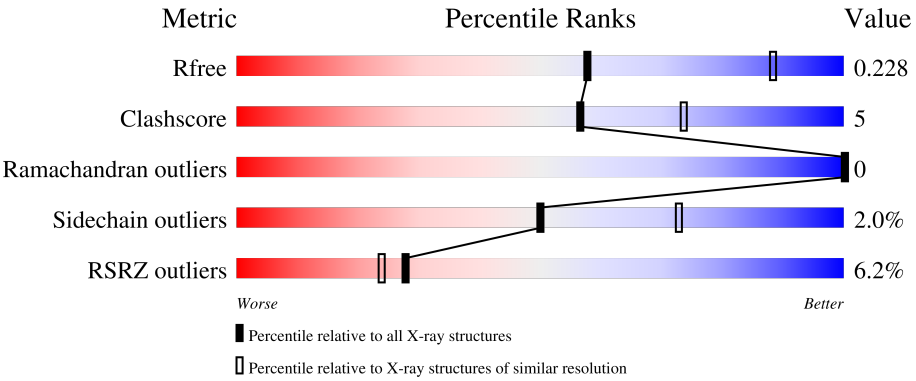
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	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

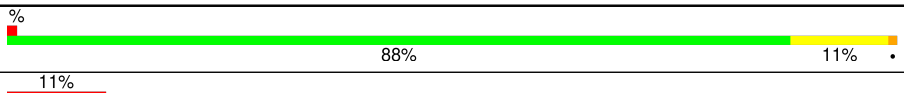
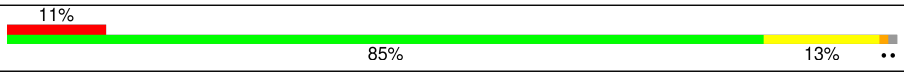
The reported resolution of this entry is 2.58 Å.

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	4456 (2.60-2.56)
Clashscore	180529	4905 (2.60-2.56)
Ramachandran outliers	177936	4847 (2.60-2.56)
Sidechain outliers	177891	4847 (2.60-2.56)
RSRZ outliers	164620	4456 (2.60-2.56)

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	1288	
1	B	1288	

2 Entry composition

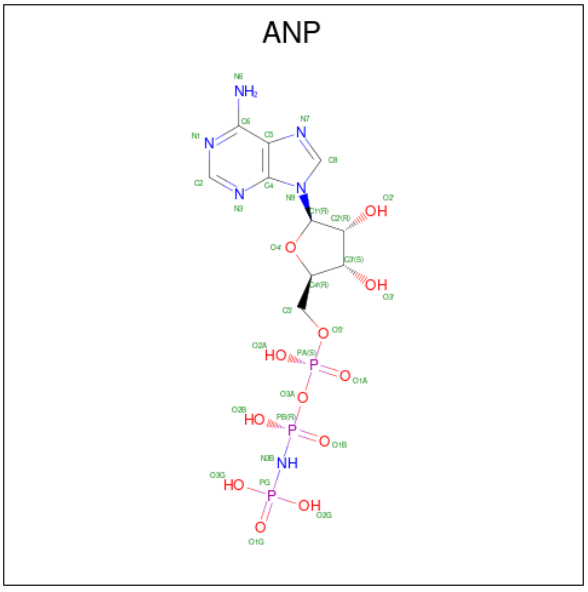
There are 6 unique types of molecules in this entry. The entry contains 20258 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 N-methylhydantoinase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1287	Total	C	N	O	S	0	0	0
			9841	6175	1703	1923	40			
1	B	1280	Total	C	N	O	S	0	0	0
			9788	6143	1694	1911	40			

- Molecule 2 is PHOSPHOAMINOPHOSPHONIC ACID-ADENYLATE ESTER (CCD ID: ANP) (formula: $C_{10}H_{17}N_6O_{12}P_3$) (labeled as "Ligand of Interest" by depositor).

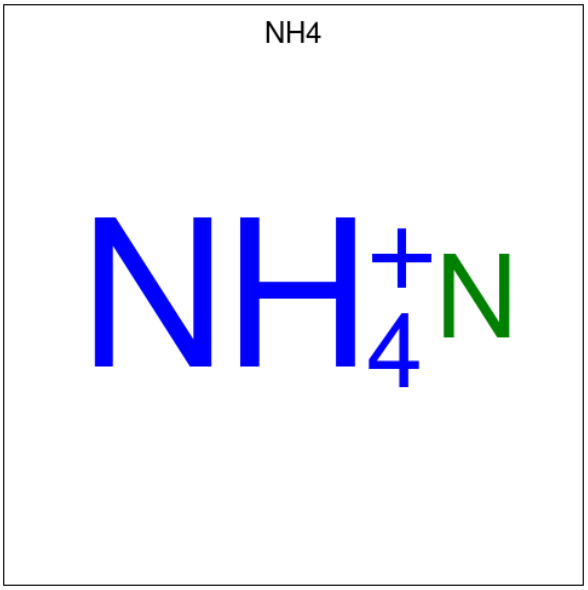


Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			31	10	6	12	3		
2	B	1	Total	C	N	O	P	0	0
			31	10	6	12	3		

- Molecule 3 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

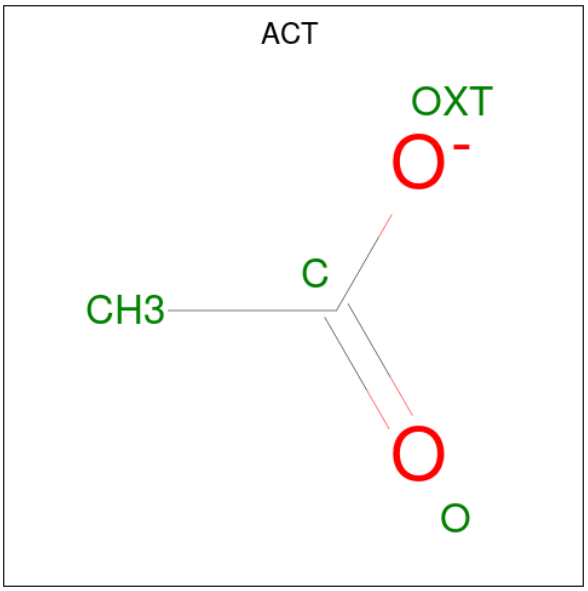
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	12	Total Zn 12 12	0	0
3	B	11	Total Zn 11 11	0	0

- Molecule 4 is AMMONIUM ION (CCD ID: NH4) (formula: H_4N).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total N 1 1	0	0

- Molecule 5 is ACETATE ION (CCD ID: ACT) (formula: $C_2H_3O_2$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	1	Total C O 4 2 2	0	0
5	B	1	Total C O 4 2 2	0	0

- Molecule 6 is water.

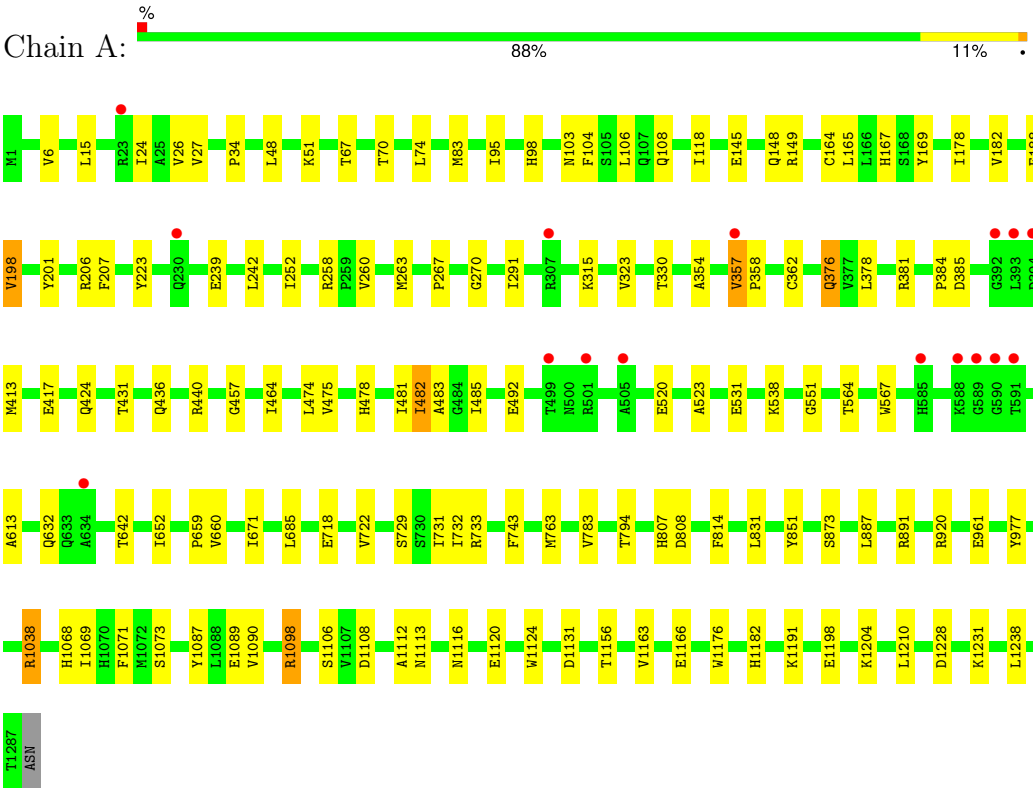
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	420	Total O 420 420	0	0
6	B	115	Total O 115 115	0	0

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.

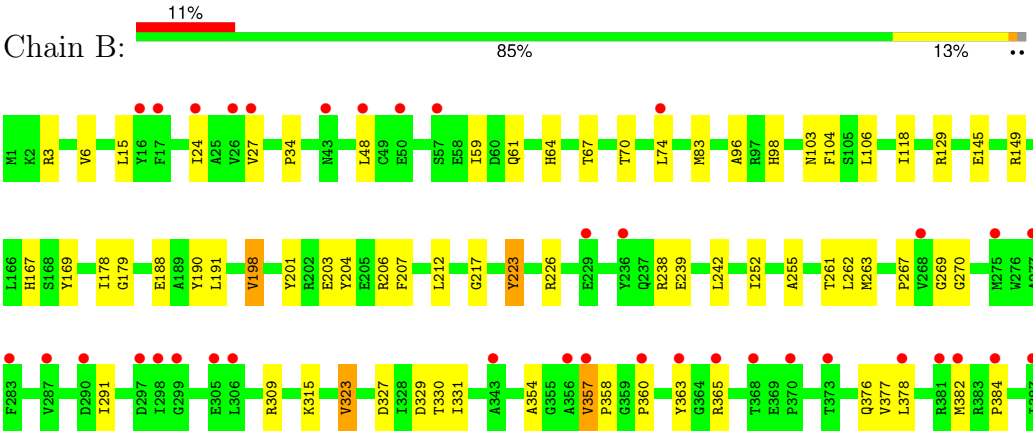
• Molecule 1: N-methylhydantoinase

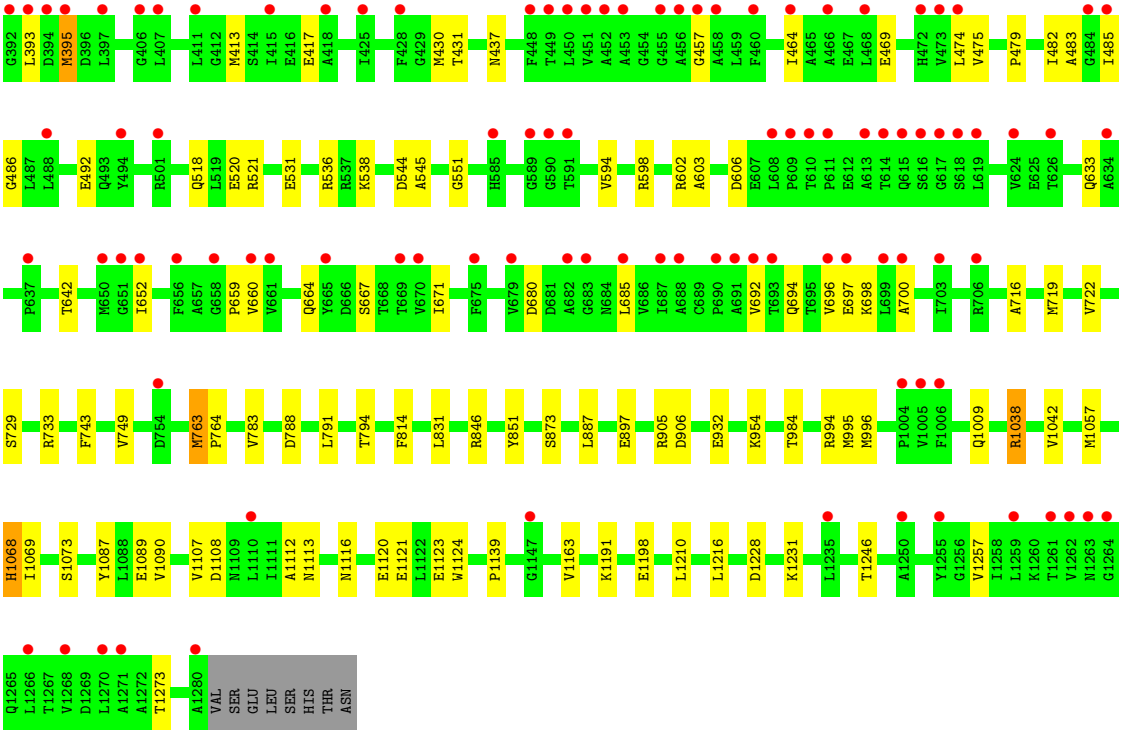
Chain A:



• Molecule 1: N-methylhydantoinase

Chain B:




G392 L393 D394 M395 D396 L397 G406 L407 L411 G412 M413 S414 I415 E416 E417 A418 I425 F428 G429 M430 T431 N437 F448 T449 L450 V451 A452 A453 G454 G455 A456 G457 A458 L459 F460 I464 A465 A466 E467 L468 E469 H472 V473 L474 V475 P479 I482 A483 G484 I485
G486 L487 L488 E492 Q493 Y494 R501 Q518 L519 E520 R521 E531 R536 R537 K538 D544 A545 G551 H585 G589 G590 T591 V594 R598 R602 A603 D606 E607 L608 P609 T610 P611 E612 A613 T614 Q615 S616 G617 S618 L619 V624 E625 T626 Q633 A634
P637 T642 M650 G651 I652 F656 A657 G658 P659 V660 V661 Q664 Y665 D666 S667 T668 T669 V670 I671 F675 V679 D680 D681 A682 G683 N684 L685 V686 I687 A688 C689 P690 A691 V692 T693 Q694 T695 V696 E697 K698 L699 A700 I703 R706 A716 M719 V722
S729 R733 F743 V749 D754 M763 P764 V783 D788 L791 T794 F814 L831 R846 Y851 S873 L887 E897 R905 D906 E932 K954 Y984 R994 M995 M996 P1004 V1005 F1006 Q1009 R1038 V1042 M1057
H1068 I1069 S1073 Y1087 L1088 E1089 V1090 V1107 D1108 N1109 L1110 I1111 A1112 N1113 N1116 E1120 E1121 L1122 E1123 W1124 P1139 G1147 V1163 K1191 E1198 L1210 L1216 D1228 K1231 L1235 T1246 A1250 Y1255 G1256 V1257 I1258 L1259 K1260 T1261 V1262 N1263 G1264
Q1265 L1266 T1267 V1268 D1269 L1270 A1271 A1272 T1273 A1280 VAL SER GLU LEU SER HIS THR ASN

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	74.84Å 184.99Å 289.01Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	57.04 – 2.58 57.04 – 2.58	Depositor EDS
% Data completeness (in resolution range)	76.6 (57.04-2.58) 74.7 (57.04-2.58)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.46 (at 2.58Å)	Xtriage
Refinement program	PHENIX 1.21.1_5286	Depositor
R, R_{free}	0.194 , 0.226 0.197 , 0.228	Depositor DCC
R_{free} test set	4832 reflections (3.80%)	wwPDB-VP
Wilson B-factor (Å^2)	56.6	Xtriage
Anisotropy	0.019	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 48.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	20258	wwPDB-VP
Average B, all atoms (Å^2)	72.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.09% of the height of the origin peak. No significant pseudotranslation is detected.*

[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: ACT, ANP, ZN, NH4

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	0.13	0/10036	0.36	0/13626
1	B	0.13	0/9982	0.36	0/13552
All	All	0.13	0/20018	0.36	0/27178

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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	9841	0	9640	77	0
1	B	9788	0	9590	100	0
2	A	31	0	13	0	0
2	B	31	0	13	0	0
3	A	12	0	0	0	0
3	B	11	0	0	0	0
4	A	1	0	0	0	0
5	A	4	0	3	0	0
5	B	4	0	3	1	0
6	A	420	0	0	4	0
6	B	115	0	0	3	0
All	All	20258	0	19262	177	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 5.

All (177) 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:A:108:GLN:O	1:A:1098:ARG:NH2	2.04	0.90
1:A:413:MET:HB3	1:A:417:GLU:HG3	1.61	0.81
1:B:357:VAL:HG13	1:B:358:PRO:HD3	1.65	0.78
1:B:413:MET:HB3	1:B:417:GLU:HG3	1.64	0.78
1:B:469:GLU:HA	1:B:692:VAL:HG21	1.66	0.78
1:B:794:THR:OG1	1:B:1038:ARG:NH1	2.17	0.77
1:A:384:PRO:HA	1:A:395:MET:HB2	1.74	0.68
1:A:808:ASP:OD2	6:A:1401:HOH:O	2.10	0.68
1:A:198:VAL:HG13	1:A:206:ARG:HG3	1.75	0.68
1:B:391:SER:HB2	1:B:393:LEU:HD13	1.75	0.68
1:B:431:THR:HG22	1:B:464:ILE:HG23	1.75	0.68
1:B:897:GLU:OE1	6:B:1401:HOH:O	2.12	0.67
1:A:197:ILE:O	1:A:258:ARG:NH1	2.22	0.66
1:B:994:ARG:HH11	1:B:1009:GLN:HG2	1.60	0.66
1:A:492:GLU:HB2	1:A:603:ALA:HB3	1.78	0.65
1:B:538:LYS:HB2	1:B:602:ARG:HB3	1.80	0.64
1:B:469:GLU:HG2	1:B:692:VAL:HG11	1.80	0.63
1:A:34:PRO:HG2	1:A:357:VAL:HG22	1.79	0.63
1:A:67:THR:HG22	1:A:267:PRO:HD3	1.81	0.62
1:B:70:THR:OG1	1:B:263:MET:O	2.16	0.61
1:B:104:PHE:CE2	1:B:1009:GLN:HG3	2.36	0.61
1:B:354:ALA:O	1:B:358:PRO:HD2	2.02	0.60
1:B:1038:ARG:NH2	5:B:1313:ACT:OXT	2.34	0.59
1:B:492:GLU:HB2	1:B:603:ALA:HB3	1.84	0.59
1:B:551:GLY:N	1:B:733:ARG:HD2	2.19	0.58
1:A:794:THR:OG1	1:A:1038:ARG:NH1	2.37	0.57
1:A:994:ARG:HH11	1:A:1009:GLN:HG2	1.69	0.57
1:A:362:CYS:HB3	1:A:400:ALA:HB2	1.85	0.57
1:A:70:THR:OG1	1:A:263:MET:O	2.20	0.56
1:B:1139:PRO:HB3	1:B:1246:THR:HA	1.87	0.56
1:A:1120:GLU:O	1:A:1124:TRP:HD1	1.89	0.55
1:B:696:VAL:C	1:B:698:LYS:H	2.14	0.55
1:B:167:HIS:HA	1:B:169:TYR:CE1	2.42	0.55
1:A:98:HIS:O	1:A:98:HIS:ND1	2.38	0.55
1:A:431:THR:HG22	1:A:464:ILE:HG23	1.88	0.55
1:B:198:VAL:HG13	1:B:206:ARG:HG3	1.88	0.54
1:B:59:ILE:O	1:B:238:ARG:NH2	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:743:PHE:HB2	1:A:814:PHE:HB2	1.89	0.54
1:A:1191:LYS:O	1:A:1198:GLU:HA	2.07	0.54
1:B:1069:ILE:HD11	1:B:1090:VAL:HG13	1.90	0.53
1:B:83:MET:HB2	1:B:118:ILE:HG21	1.90	0.53
1:B:67:THR:HG22	1:B:267:PRO:HD3	1.90	0.53
1:A:103:ASN:OD1	1:A:1113:ASN:ND2	2.42	0.53
1:B:98:HIS:O	1:B:98:HIS:ND1	2.39	0.53
1:B:212:LEU:HG	1:B:263:MET:HE3	1.91	0.52
1:A:74:LEU:HD11	1:A:330:THR:HG22	1.91	0.52
1:B:129:ARG:NH2	1:B:1123:GLU:OE2	2.39	0.52
1:A:167:HIS:HA	1:A:169:TYR:CE1	2.44	0.52
1:B:384:PRO:HA	1:B:395:MET:HB2	1.91	0.52
1:A:98:HIS:CD2	1:A:1116:ASN:HB3	2.45	0.52
1:A:182:VAL:HG11	1:A:191:LEU:HD13	1.92	0.52
1:B:1257:VAL:HA	1:B:1273:THR:HG23	1.92	0.52
1:B:1120:GLU:O	1:B:1124:TRP:HD1	1.93	0.52
1:B:1108:ASP:HB3	1:B:1112:ALA:O	2.10	0.51
1:A:551:GLY:N	1:A:733:ARG:HD2	2.26	0.51
1:B:659:PRO:HA	1:B:671:ILE:O	2.10	0.51
1:A:104:PHE:CE2	1:A:1009:GLN:HG3	2.46	0.51
1:A:1108:ASP:HB3	1:A:1112:ALA:O	2.10	0.51
1:B:722:VAL:HG21	1:B:887:LEU:HD13	1.93	0.51
1:B:64:HIS:NE2	1:B:223:TYR:OH	2.31	0.51
1:B:783:VAL:HB	1:B:851:TYR:HB2	1.92	0.51
1:A:376:GLN:HG3	1:A:381:ARG:HB2	1.93	0.50
1:B:255:ALA:HB1	1:B:262:LEU:HD11	1.93	0.50
1:B:536:ARG:NH2	1:B:606:ASP:OD1	2.39	0.50
1:A:831:LEU:HG	1:A:1073:SER:HB2	1.94	0.50
1:B:994:ARG:NH1	1:B:1009:GLN:HG2	2.26	0.50
1:B:1163:VAL:HG21	1:B:1210:LEU:HD12	1.94	0.50
1:A:239:GLU:HG2	1:A:252:ILE:HG22	1.94	0.50
1:B:377:VAL:HG22	1:B:382:MET:HB2	1.92	0.50
1:A:1182:HIS:HE1	6:A:1403:HOH:O	1.92	0.50
1:B:239:GLU:HG2	1:B:252:ILE:HG22	1.93	0.49
1:A:260:VAL:HA	1:A:263:MET:HE2	1.94	0.49
1:B:365:ARG:NH1	1:B:393:LEU:HD11	2.27	0.49
1:A:145:GLU:O	1:A:149:ARG:HG2	2.13	0.49
1:B:694:GLN:OE1	1:B:698:LYS:HB3	2.12	0.49
1:B:749:VAL:HG23	1:B:764:PRO:HB3	1.94	0.49
1:A:478:HIS:HB3	1:A:481:ILE:HD12	1.94	0.49
1:A:613:ALA:HB3	1:A:652:ILE:HD11	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:642:THR:HG23	1:B:660:VAL:HA	1.94	0.48
1:B:664:GLN:HG2	1:B:667:SER:O	2.13	0.48
1:A:1163:VAL:HG21	1:A:1210:LEU:HD12	1.93	0.48
1:B:103:ASN:OD1	1:B:1113:ASN:ND2	2.44	0.48
1:A:994:ARG:NH1	1:A:1009:GLN:HG2	2.29	0.47
1:B:98:HIS:CD2	1:B:1116:ASN:HB3	2.49	0.47
1:A:67:THR:OG1	6:A:1402:HOH:O	2.20	0.47
1:A:538:LYS:HB2	1:A:602:ARG:HB3	1.96	0.47
1:B:545:ALA:HB2	1:B:594:VAL:HG22	1.95	0.47
1:B:106:LEU:HG	1:B:995:MET:HE2	1.97	0.47
1:B:360:PRO:HD2	1:B:363:TYR:CD2	2.50	0.47
1:B:469:GLU:OE2	1:B:694:GLN:NE2	2.47	0.47
1:B:518:GLN:OE1	1:B:521:ARG:NH1	2.47	0.47
1:B:743:PHE:HB2	1:B:814:PHE:HB2	1.97	0.47
1:B:309:ARG:HE	1:B:327:ASP:HA	1.80	0.47
1:B:34:PRO:HG2	1:B:357:VAL:HG12	1.97	0.46
1:B:3:ARG:HD2	1:B:61:GLN:OE1	2.15	0.46
1:B:788:ASP:OD2	1:B:846:ARG:NH1	2.46	0.46
1:B:479:PRO:HA	1:B:482:ILE:HG23	1.98	0.46
1:B:164:CYS:HB3	1:B:207:PHE:CD1	2.52	0.45
1:B:729:SER:HB3	1:B:873:SER:OG	2.16	0.45
1:A:291:ILE:HD12	1:A:457:GLY:HA2	1.98	0.45
1:A:523:ALA:HB1	1:A:601:ALA:HB2	1.98	0.45
1:B:179:GLY:HA2	1:B:191:LEU:HD21	1.98	0.45
1:B:475:VAL:HB	1:B:685:LEU:HB2	1.99	0.45
1:A:354:ALA:O	1:A:358:PRO:HD2	2.17	0.45
1:B:932:GLU:HG2	1:B:954:LYS:HG3	1.98	0.45
1:A:83:MET:HB2	1:A:118:ILE:HG21	1.99	0.45
1:A:659:PRO:HA	1:A:671:ILE:O	2.16	0.45
1:A:1228:ASP:HB3	1:A:1231:LYS:HD3	1.98	0.45
1:A:564:THR:H	1:A:567:TRP:HB3	1.82	0.45
1:A:783:VAL:HB	1:A:851:TYR:HB2	1.99	0.45
1:A:1069:ILE:HD11	1:A:1090:VAL:HG13	1.99	0.45
1:A:436:GLN:HA	1:A:440:ARG:HG3	1.99	0.45
1:B:482:ILE:HA	1:B:485:ILE:HB	1.98	0.45
1:A:807:HIS:HE1	6:A:1401:HOH:O	1.96	0.44
1:B:1191:LYS:O	1:B:1198:GLU:HA	2.17	0.44
1:B:329:ASP:HB2	1:B:437:ASN:OD1	2.18	0.44
1:A:15:LEU:HB3	1:A:48:LEU:HD22	2.00	0.44
1:B:270:GLY:HA2	1:B:483:ALA:HA	1.98	0.44
1:B:652:ILE:HD12	1:B:680:ASP:O	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:6:VAL:HG13	1:A:15:LEU:HG	2.00	0.44
1:A:164:CYS:HB3	1:A:207:PHE:CD1	2.52	0.44
1:A:1087:TYR:CZ	1:A:1089:GLU:HB2	2.52	0.44
1:A:1176:TRP:CD1	1:A:1176:TRP:H	2.36	0.44
1:B:831:LEU:HG	1:B:1073:SER:HB2	2.00	0.44
1:A:95:ILE:HG12	1:A:1106:SER:HB2	2.01	0.43
1:A:729:SER:HB3	1:A:873:SER:OG	2.19	0.43
1:B:905:ARG:NH1	1:B:906:ASP:OD1	2.51	0.43
1:B:1068:HIS:CG	1:B:1069:ILE:N	2.87	0.43
1:A:83:MET:HE2	1:A:164:CYS:HB2	2.01	0.43
1:B:24:ILE:HD13	1:B:24:ILE:HA	1.86	0.43
1:A:731:ILE:HG23	1:A:732:ILE:HG13	2.01	0.43
1:A:24:ILE:HD13	1:A:24:ILE:HA	1.87	0.43
1:A:977:TYR:CE1	1:A:1204:LYS:HD3	2.53	0.43
1:B:791:LEU:HD23	1:B:791:LEU:HA	1.86	0.43
1:B:544:ASP:OD1	1:B:598:ARG:NH1	2.52	0.43
1:A:165:LEU:HD11	1:A:178:ILE:HD12	2.01	0.43
1:A:482:ILE:HD12	1:A:485:ILE:HD12	2.00	0.43
1:B:6:VAL:HG13	1:B:15:LEU:HG	2.01	0.43
1:B:1191:LYS:HA	1:B:1216:LEU:HD12	2.01	0.42
1:B:291:ILE:HD12	1:B:457:GLY:HA2	2.01	0.42
1:A:357:VAL:HB	1:A:358:PRO:HD3	2.00	0.42
1:A:106:LEU:HG	1:A:995:MET:HE2	2.00	0.42
1:A:424:GLN:OE1	1:A:632:GLN:HG2	2.18	0.42
1:B:763:MET:N	1:B:764:PRO:HD2	2.35	0.42
1:B:996:MET:HB3	1:B:1057:MET:HE1	2.01	0.42
1:A:385:ASP:OD1	1:A:385:ASP:N	2.53	0.42
1:A:1131:ASP:OD2	1:A:1156:THR:OG1	2.32	0.42
1:B:694:GLN:CD	1:B:698:LYS:HB3	2.44	0.42
1:B:716:ALA:O	1:B:719:MET:HG2	2.19	0.42
1:B:1228:ASP:HB3	1:B:1231:LYS:HD2	2.02	0.42
1:B:98:HIS:HB2	1:B:1107:VAL:HA	2.01	0.42
1:B:261:THR:HA	1:B:323:VAL:HG11	2.01	0.42
1:A:718:GLU:OE2	1:A:891:ARG:NH2	2.50	0.41
1:B:269:GLY:O	1:B:486:GLY:HA3	2.20	0.41
1:B:1087:TYR:CZ	1:B:1089:GLU:HB2	2.55	0.41
1:A:475:VAL:HB	1:A:685:LEU:HB2	2.02	0.41
1:A:1238:LEU:HD22	1:A:1268:VAL:HG23	2.02	0.41
1:B:96:ALA:HA	1:B:204:TYR:CD1	2.55	0.41
1:A:642:THR:HG23	1:A:660:VAL:HA	2.02	0.41
1:A:920:ARG:HH12	1:A:961:GLU:CD	2.28	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:190:TYR:CE2	1:B:217:GLY:HA3	2.56	0.41
1:B:697:GLU:HA	1:B:700:ALA:HB3	2.02	0.41
1:B:15:LEU:HB3	1:B:48:LEU:HD22	2.03	0.41
1:A:722:VAL:HG21	1:A:887:LEU:HD13	2.01	0.41
1:B:67:THR:OG1	6:B:1402:HOH:O	2.22	0.41
1:B:984:THR:HG22	1:B:1042:VAL:HG11	2.03	0.41
1:A:1071:PHE:HB3	1:A:1166:GLU:HB3	2.03	0.41
1:B:74:LEU:HD11	1:B:330:THR:HG22	2.02	0.41
1:B:145:GLU:O	1:B:149:ARG:HG2	2.21	0.41
1:B:1121:GLU:HG3	6:B:1443:HOH:O	2.21	0.41
1:A:26:VAL:HG11	1:A:51:LYS:HB3	2.02	0.41
1:A:270:GLY:HA2	1:A:483:ALA:HA	2.02	0.40
1:B:203:GLU:HG2	1:B:204:TYR:N	2.36	0.40
1:B:331:ILE:HD11	1:B:430:MET:HG2	2.04	0.40
1:A:481:ILE:HG22	1:A:481:ILE:O	2.21	0.40
1:B:165:LEU:HD11	1:B:178:ILE:HD12	2.03	0.40
1:B:696:VAL:C	1:B:698:LYS:N	2.78	0.40

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	1285/1288 (100%)	1253 (98%)	32 (2%)	0	100	100
1	B	1278/1288 (99%)	1243 (97%)	35 (3%)	0	100	100
All	All	2563/2576 (100%)	2496 (97%)	67 (3%)	0	100	100

There are no Ramachandran outliers to report.

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	1038/1039 (100%)	1016 (98%)	22 (2%)	48 71
1	B	1031/1039 (99%)	1011 (98%)	20 (2%)	52 74
All	All	2069/2078 (100%)	2027 (98%)	42 (2%)	50 73

All (42) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	27	VAL
1	A	148	GLN
1	A	188	GLU
1	A	198	VAL
1	A	201	TYR
1	A	223	TYR
1	A	242	LEU
1	A	315	LYS
1	A	323	VAL
1	A	357	VAL
1	A	376	GLN
1	A	378	LEU
1	A	395	MET
1	A	474	LEU
1	A	482	ILE
1	A	520	GLU
1	A	531	GLU
1	A	763	MET
1	A	1038	ARG
1	A	1068	HIS
1	A	1098	ARG
1	A	1285	SER
1	B	27	VAL
1	B	188	GLU
1	B	198	VAL
1	B	201	TYR
1	B	223	TYR

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Mol	Chain	Res	Type
1	B	226	ARG
1	B	242	LEU
1	B	315	LYS
1	B	323	VAL
1	B	357	VAL
1	B	376	GLN
1	B	378	LEU
1	B	395	MET
1	B	474	LEU
1	B	520	GLU
1	B	531	GLU
1	B	633	GLN
1	B	763	MET
1	B	1038	ARG
1	B	1068	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (10) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	107	GLN
1	A	230	GLN
1	A	493	GLN
1	A	615	GLN
1	A	632	GLN
1	A	694	GLN
1	A	921	GLN
1	A	1043	GLN
1	B	225	HIS
1	B	1043	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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 28 ligands modelled in this entry, 23 are monoatomic and 1 is modelled with single atom - leaving 4 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
5	ACT	B	1313	3	3,3,3	1.14	0	3,3,3	1.01	0
2	ANP	B	1301	3	29,33,33	2.63	6 (20%)	31,52,52	1.56	4 (12%)
5	ACT	A	1315	3	3,3,3	1.33	0	3,3,3	0.22	0
2	ANP	A	1301	3	29,33,33	2.59	6 (20%)	31,52,52	1.63	4 (12%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	ANP	B	1301	3	-	2/14/38/38	0/3/3/3
2	ANP	A	1301	3	-	1/14/38/38	0/3/3/3

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1301	ANP	PB-O3A	9.25	1.70	1.59
2	A	1301	ANP	PB-O3A	9.12	1.70	1.59
2	B	1301	ANP	PG-N3B	6.51	1.80	1.63
2	A	1301	ANP	PG-N3B	6.36	1.80	1.63
2	A	1301	ANP	PG-O1G	5.01	1.53	1.46
2	B	1301	ANP	PG-O1G	4.91	1.53	1.46
2	B	1301	ANP	PB-O1B	3.33	1.51	1.46
2	A	1301	ANP	PB-O1B	3.25	1.51	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	1301	ANP	C8-N7	-2.37	1.30	1.34
2	B	1301	ANP	PA-O3A	2.30	1.62	1.59
2	B	1301	ANP	C8-N7	-2.30	1.30	1.34
2	A	1301	ANP	PA-O3A	2.12	1.61	1.59

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	1301	ANP	O2B-PB-O1B	4.59	119.70	109.87
2	B	1301	ANP	O2B-PB-O1B	4.41	119.32	109.87
2	A	1301	ANP	O1G-PG-N3B	-4.37	105.34	111.77
2	B	1301	ANP	O1G-PG-N3B	-4.20	105.59	111.77
2	A	1301	ANP	O2G-PG-O3G	3.08	115.88	107.59
2	B	1301	ANP	O2G-PG-O3G	2.95	115.53	107.59
2	A	1301	ANP	O3A-PB-N3B	-2.94	98.45	106.59
2	B	1301	ANP	O3A-PB-N3B	-2.93	98.47	106.59

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	1301	ANP	PB-N3B-PG-O1G
2	B	1301	ANP	PB-N3B-PG-O1G
2	B	1301	ANP	PG-N3B-PB-O3A

There are no ring outliers.

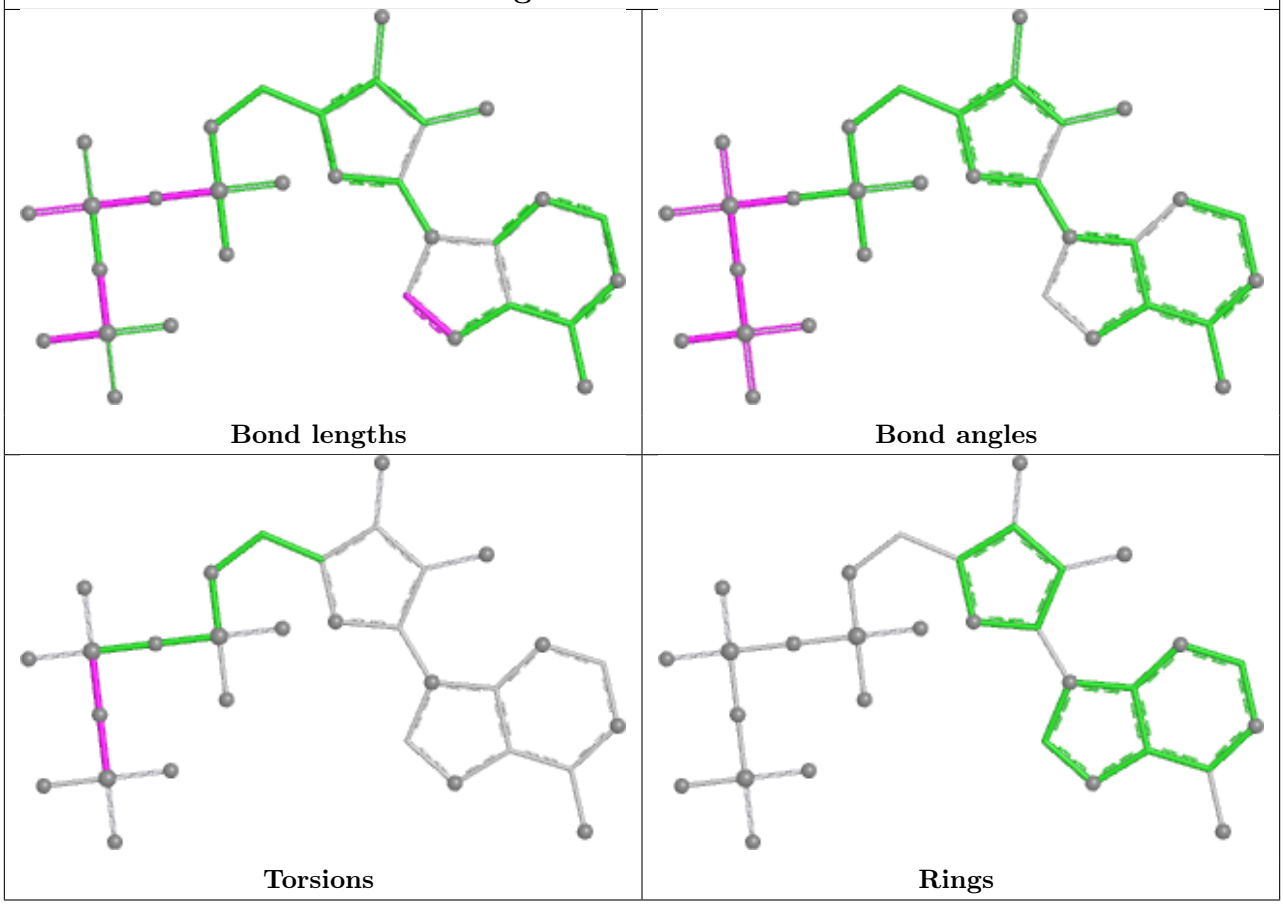
1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	B	1313	ACT	1	0

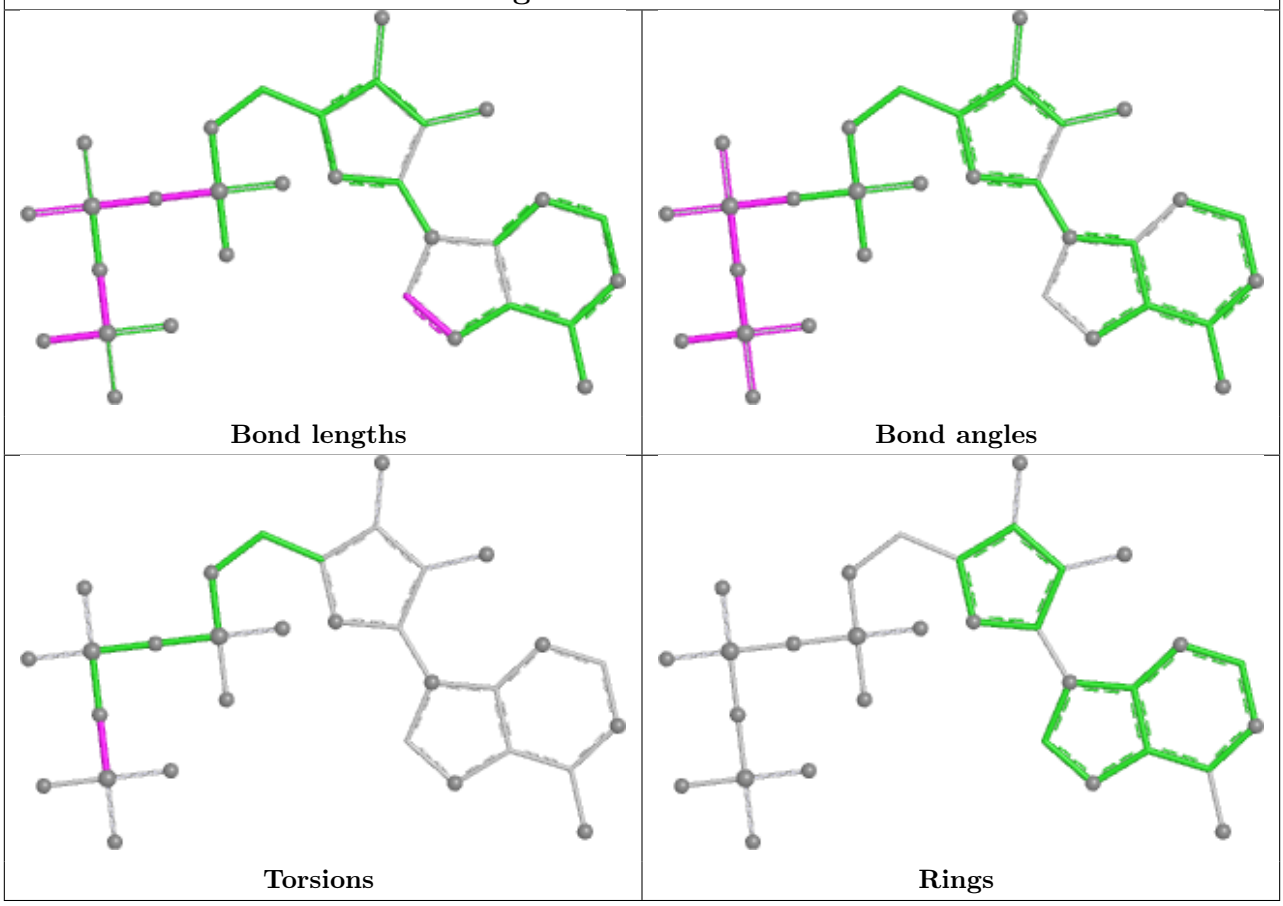
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier.

The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand ANP B 1301



Ligand ANP A 1301



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	1287/1288 (99%)	-0.21	16 (1%) 76 73	30, 51, 87, 123	0
1	B	1280/1288 (99%)	0.75	143 (11%) 11 10	44, 87, 139, 187	0
All	All	2567/2576 (99%)	0.27	159 (6%) 28 24	30, 68, 129, 187	0

All (159) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	357	VAL	6.7
1	B	1280	ALA	5.6
1	A	357	VAL	4.8
1	B	393	LEU	4.2
1	B	699	LEU	4.1
1	B	472	HIS	4.1
1	A	393	LEU	3.9
1	B	452	ALA	3.9
1	B	658	GLY	3.8
1	B	388	LEU	3.8
1	B	691	ALA	3.6
1	B	464	ILE	3.6
1	B	685	LEU	3.6
1	B	457	GLY	3.5
1	A	501	ARG	3.4
1	B	365	ARG	3.4
1	B	1264	GLY	3.4
1	B	754	ASP	3.3
1	A	591	THR	3.2
1	A	394	ASP	3.2
1	B	455	GLY	3.1
1	B	415	ILE	3.1
1	B	283	PHE	3.1
1	B	451	VAL	3.1

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Mol	Chain	Res	Type	RSRZ
1	B	466	ALA	3.1
1	B	690	PRO	3.1
1	B	395	MET	3.1
1	B	488	LEU	3.0
1	B	282	GLY	3.0
1	B	682	ALA	3.0
1	B	675	PHE	3.0
1	B	670	VAL	3.0
1	A	590	GLY	3.0
1	B	611	PRO	3.0
1	B	696	VAL	3.0
1	B	43	ASN	3.0
1	B	613	ALA	3.0
1	B	614	THR	3.0
1	B	363	TYR	3.0
1	B	297	ASP	3.0
1	B	700	ALA	3.0
1	B	392	GLY	2.9
1	B	290	ASP	2.9
1	B	1261	THR	2.9
1	B	615	GLN	2.9
1	B	616	SER	2.8
1	B	449	THR	2.8
1	A	392	GLY	2.8
1	B	406	GLY	2.8
1	B	656	PHE	2.8
1	B	268	VAL	2.8
1	B	589	GLY	2.8
1	B	637	PRO	2.8
1	B	1262	VAL	2.8
1	B	394	ASP	2.8
1	B	693	THR	2.8
1	B	660	VAL	2.8
1	B	287	VAL	2.7
1	B	48	LEU	2.7
1	B	1110	LEU	2.7
1	B	1271	ALA	2.7
1	B	418	ALA	2.7
1	B	650	MET	2.6
1	B	343	ALA	2.6
1	B	453	ALA	2.6
1	B	428	PHE	2.6

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Mol	Chain	Res	Type	RSRZ
1	B	692	VAL	2.6
1	B	634	ALA	2.6
1	B	494	TYR	2.6
1	A	307	ARG	2.6
1	B	275	MET	2.6
1	B	382	MET	2.6
1	B	590	GLY	2.6
1	B	411	LEU	2.6
1	B	373	THR	2.6
1	B	460	PHE	2.6
1	B	1235	LEU	2.5
1	B	24	ILE	2.5
1	B	387	ILE	2.5
1	A	588	LYS	2.5
1	B	1270	LEU	2.5
1	B	397	LEU	2.5
1	B	448	PHE	2.5
1	B	661	VAL	2.5
1	B	368	THR	2.5
1	B	610	THR	2.5
1	B	665	TYR	2.5
1	B	1005	VAL	2.4
1	B	391	SER	2.4
1	B	652	ILE	2.4
1	B	1147	GLY	2.4
1	B	585	HIS	2.4
1	B	305	GLU	2.4
1	B	280	GLN	2.4
1	B	74	LEU	2.4
1	B	1266	LEU	2.4
1	B	277	ALA	2.4
1	B	356	ALA	2.4
1	B	687	ILE	2.4
1	B	306	LEU	2.4
1	B	378	LEU	2.4
1	A	585	HIS	2.4
1	B	624	VAL	2.4
1	B	468	LEU	2.3
1	B	619	LEU	2.3
1	B	669	THR	2.3
1	B	608	LEU	2.3
1	B	16	TYR	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	589	GLY	2.3
1	B	57	SER	2.3
1	B	407	LEU	2.3
1	B	360	PRO	2.3
1	B	26	VAL	2.3
1	B	706	ARG	2.3
1	A	634	ALA	2.3
1	B	683	GLY	2.2
1	B	1259	LEU	2.2
1	A	499	THR	2.2
1	B	1006	PHE	2.2
1	B	389	ALA	2.2
1	B	651	GLY	2.2
1	B	17	PHE	2.2
1	B	609	PRO	2.2
1	B	229	GLU	2.2
1	B	161	ILE	2.2
1	B	485	ILE	2.2
1	A	505	ALA	2.2
1	B	381	ARG	2.2
1	B	298	ILE	2.2
1	B	425	ILE	2.2
1	B	679	VAL	2.2
1	B	1004	PRO	2.2
1	B	50	GLU	2.1
1	B	697	GLU	2.1
1	B	473	VAL	2.1
1	B	450	LEU	2.1
1	B	688	ALA	2.1
1	B	384	PRO	2.1
1	A	230	GLN	2.1
1	B	1268	VAL	2.1
1	B	474	LEU	2.1
1	A	23	ARG	2.1
1	B	501	ARG	2.1
1	B	236	TYR	2.1
1	B	458	ALA	2.1
1	B	1250	ALA	2.1
1	B	299	GLY	2.1
1	B	484	GLY	2.1
1	B	591	THR	2.1
1	B	626	THR	2.1

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Mol	Chain	Res	Type	RSRZ
1	B	1263	ASN	2.1
1	B	1255	TYR	2.0
1	B	703	ILE	2.0
1	B	27	VAL	2.0
1	B	456	ALA	2.0
1	B	617	GLY	2.0
1	B	370	PRO	2.0
1	B	281	SER	2.0
1	B	618	SER	2.0

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

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

6.3 Carbohydrates (i)

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
4	NH4	A	1314	1/1	0.78	0.22	44,44,44,44	0
3	ZN	B	1310	1/1	0.83	0.12	156,156,156,156	0
2	ANP	B	1301	31/31	0.84	0.16	76,96,107,114	0
3	ZN	B	1312	1/1	0.89	0.13	220,220,220,220	0
3	ZN	B	1302	1/1	0.91	0.10	139,139,139,139	0
3	ZN	A	1302	1/1	0.91	0.10	91,91,91,91	0
3	ZN	B	1304	1/1	0.95	0.05	67,67,67,67	0
5	ACT	A	1315	4/4	0.95	0.14	40,46,47,56	0
3	ZN	A	1307	1/1	0.96	0.06	60,60,60,60	0
3	ZN	B	1303	1/1	0.96	0.08	89,89,89,89	0
3	ZN	B	1311	1/1	0.96	0.07	137,137,137,137	0
5	ACT	B	1313	4/4	0.96	0.13	58,72,75,81	0
3	ZN	A	1313	1/1	0.97	0.05	129,129,129,129	0
2	ANP	A	1301	31/31	0.97	0.08	34,52,69,72	0

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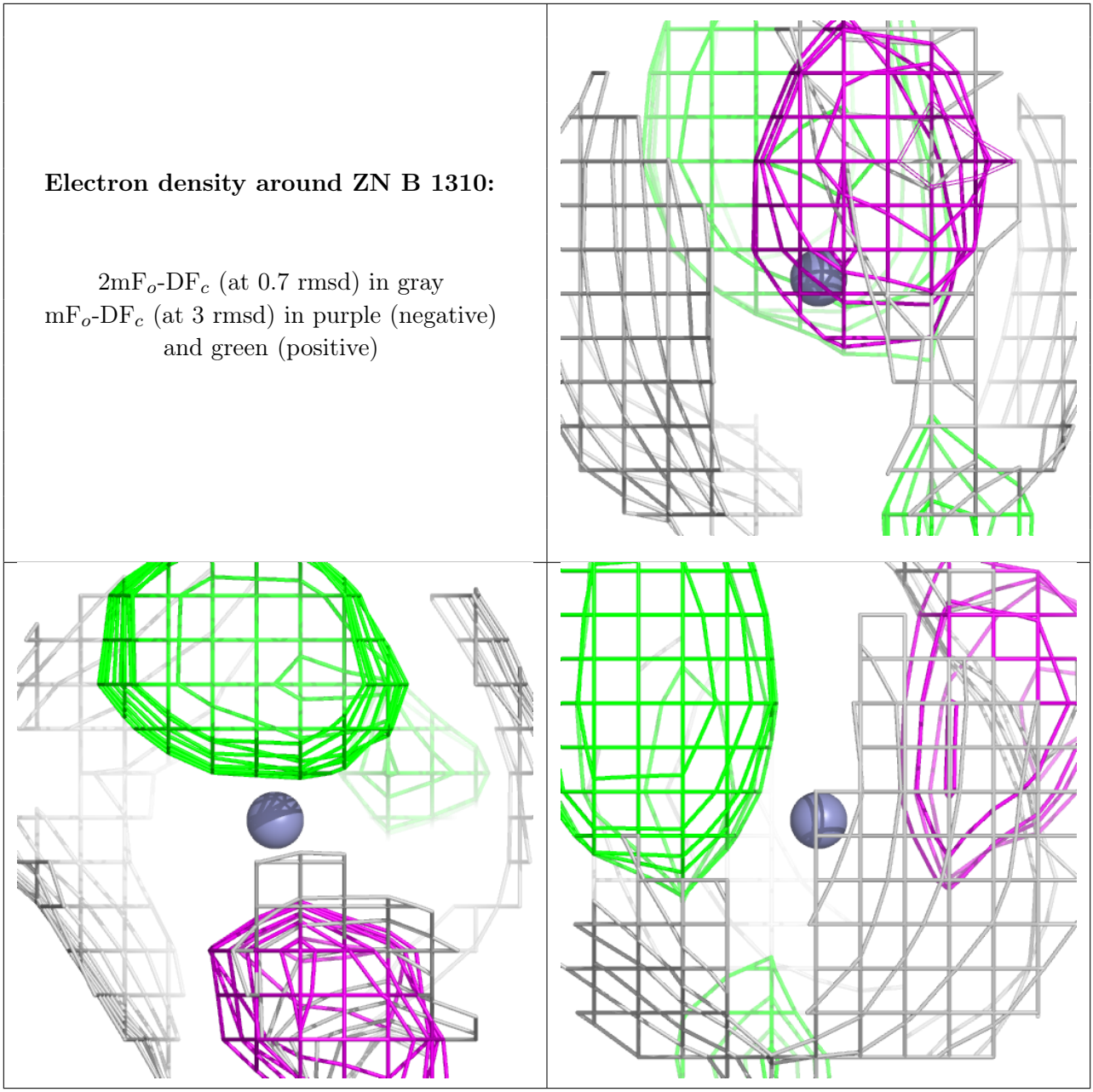
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	ZN	B	1305	1/1	0.97	0.05	81,81,81,81	0
3	ZN	B	1307	1/1	0.97	0.06	117,117,117,117	0
3	ZN	B	1308	1/1	0.97	0.08	43,43,43,43	1
3	ZN	B	1309	1/1	0.97	0.05	133,133,133,133	0
3	ZN	A	1306	1/1	0.98	0.04	104,104,104,104	0
3	ZN	A	1304	1/1	0.98	0.04	37,37,37,37	0
3	ZN	B	1306	1/1	0.98	0.07	111,111,111,111	0
3	ZN	A	1312	1/1	0.98	0.04	118,118,118,118	0
3	ZN	A	1308	1/1	0.99	0.08	82,82,82,82	0
3	ZN	A	1309	1/1	0.99	0.04	70,70,70,70	0
3	ZN	A	1310	1/1	0.99	0.07	65,65,65,65	0
3	ZN	A	1311	1/1	0.99	0.04	96,96,96,96	0
3	ZN	A	1305	1/1	0.99	0.03	69,69,69,69	0
3	ZN	A	1303	1/1	1.00	0.04	75,75,75,75	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.

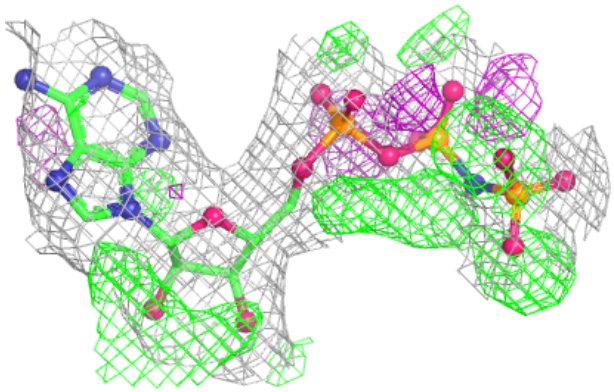
Electron density around ZN B 1310:

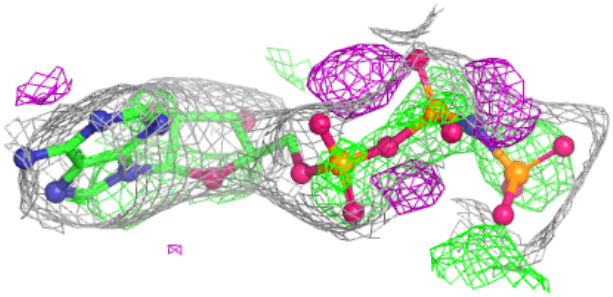
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

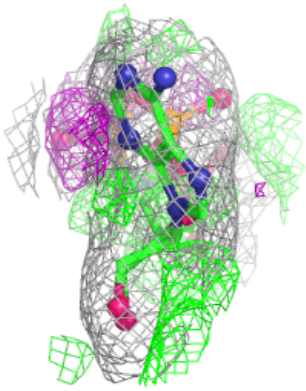


Electron density around ANP B 1301:

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

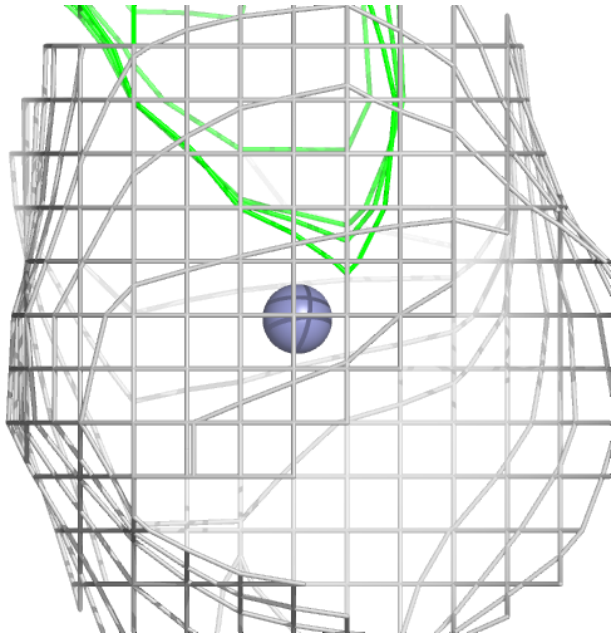


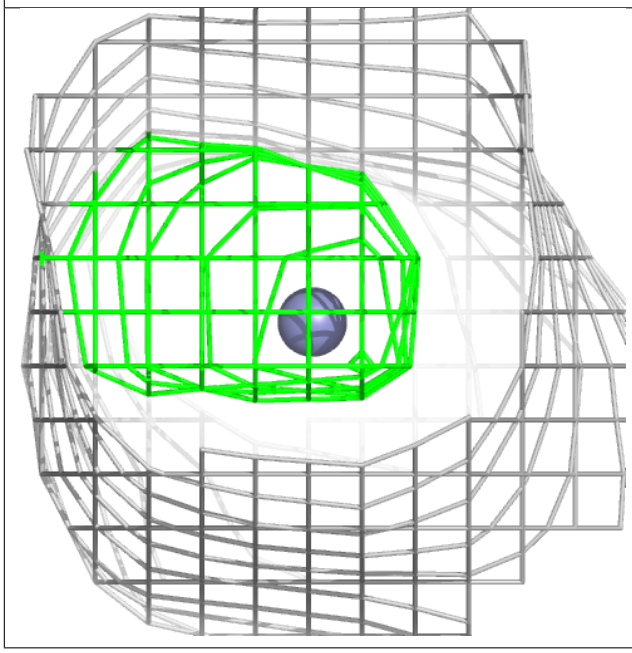


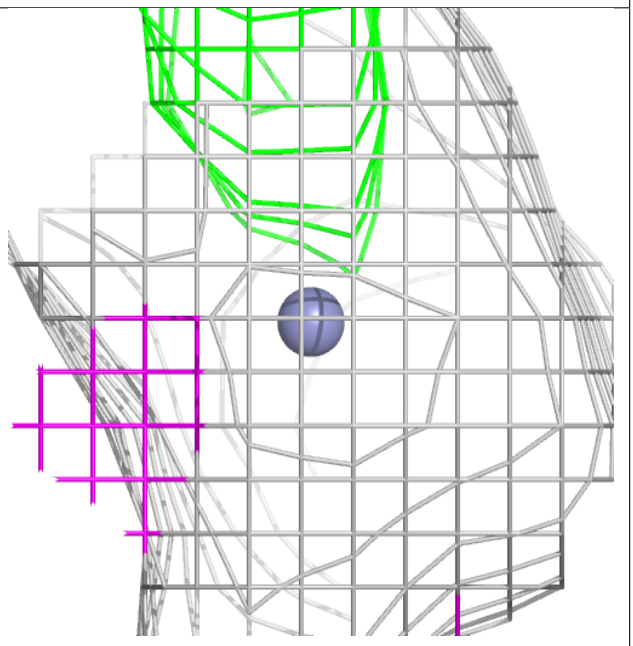


Electron density around ZN B 1312:

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

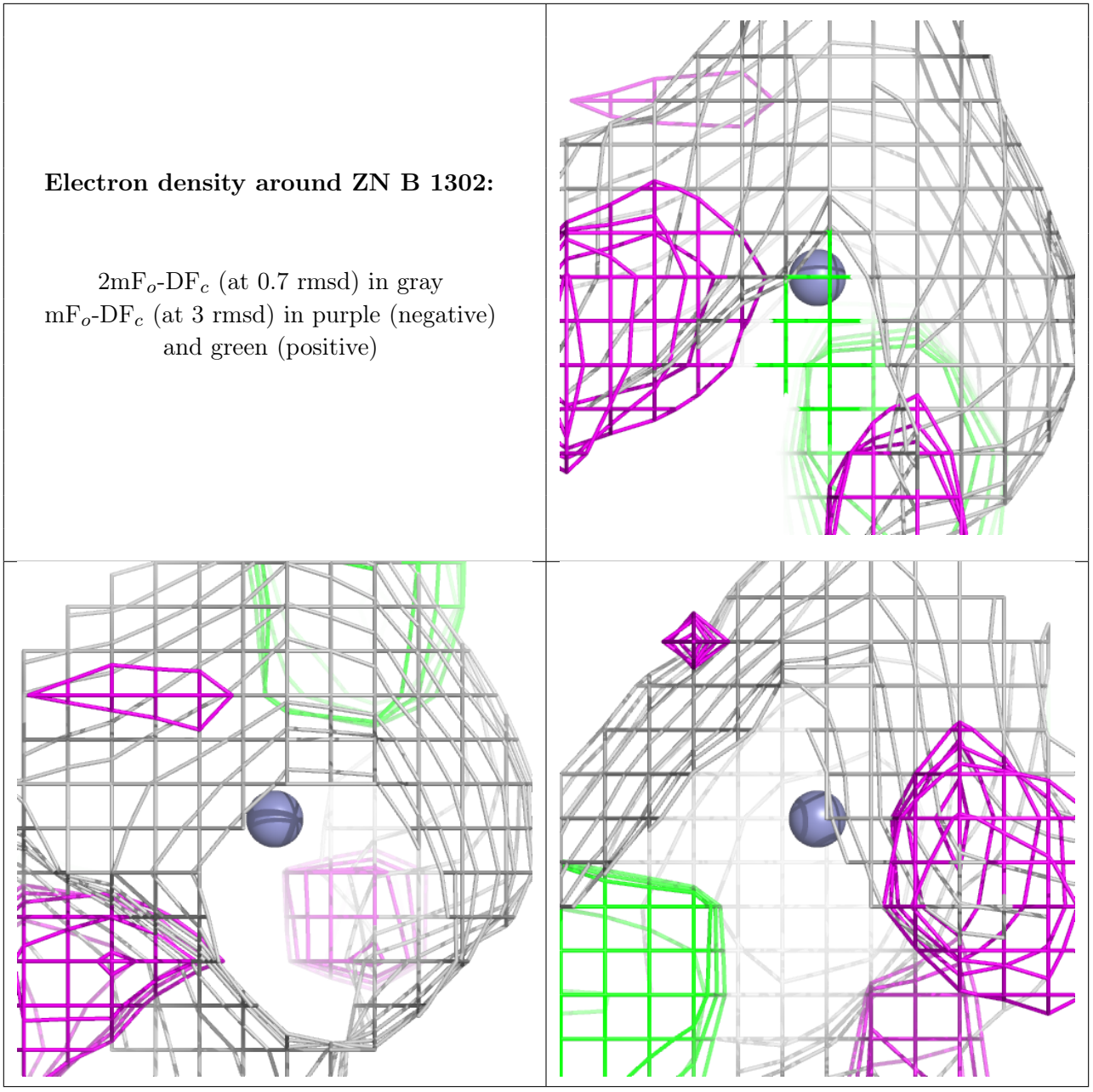






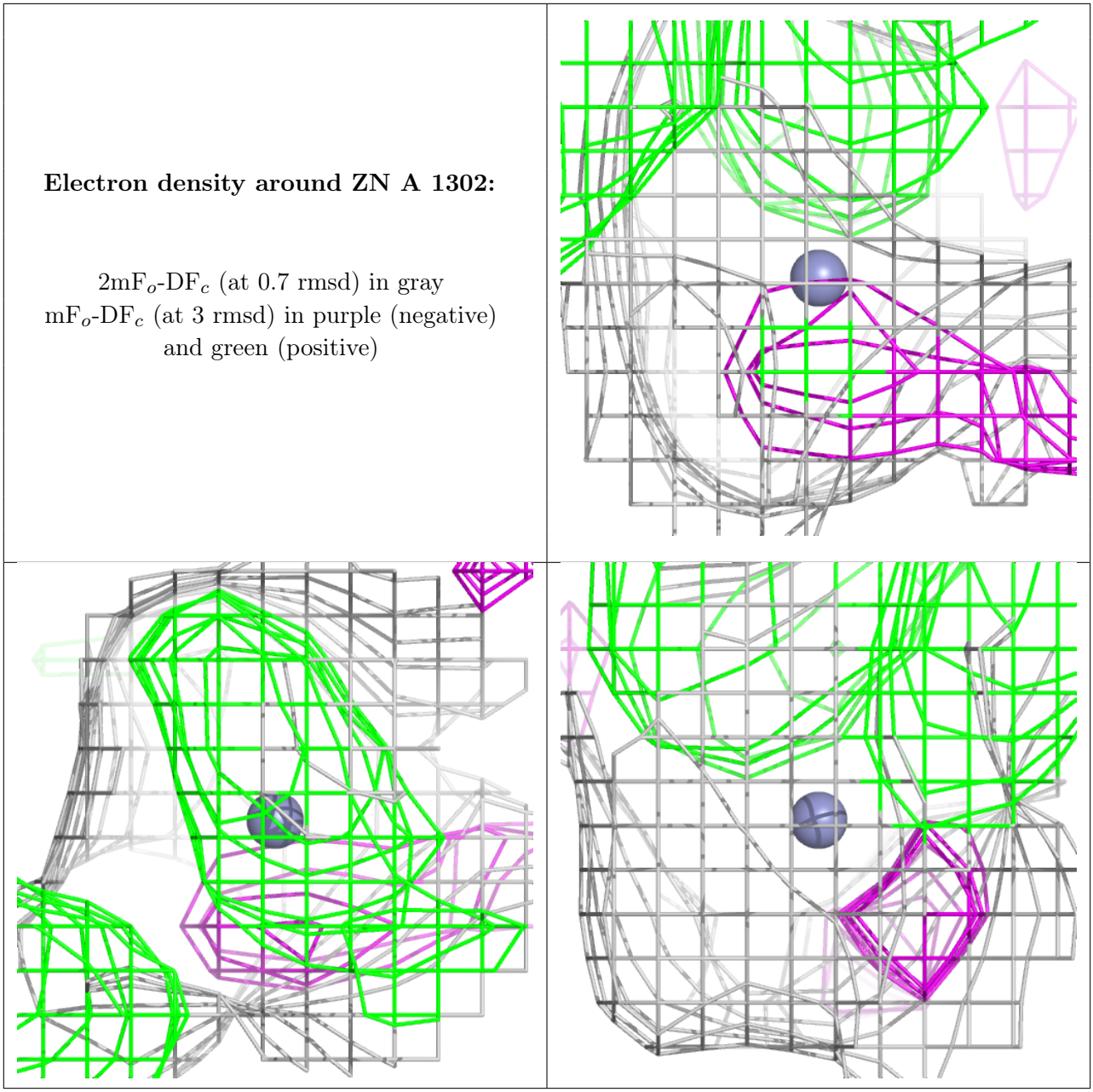
Electron density around ZN B 1302:

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



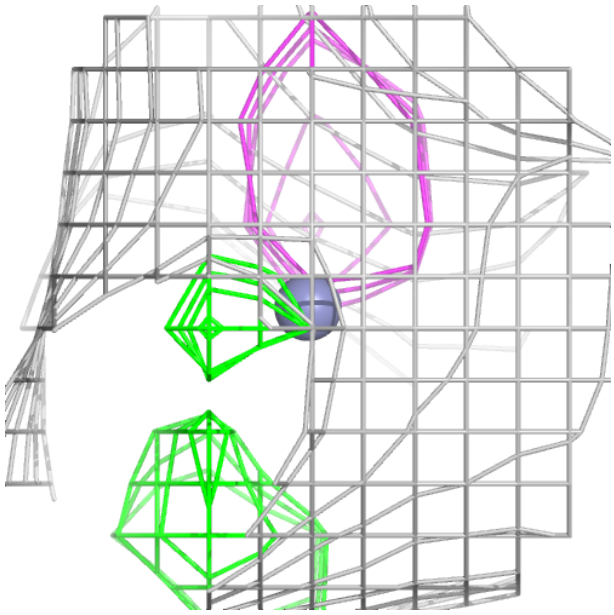
Electron density around ZN A 1302:

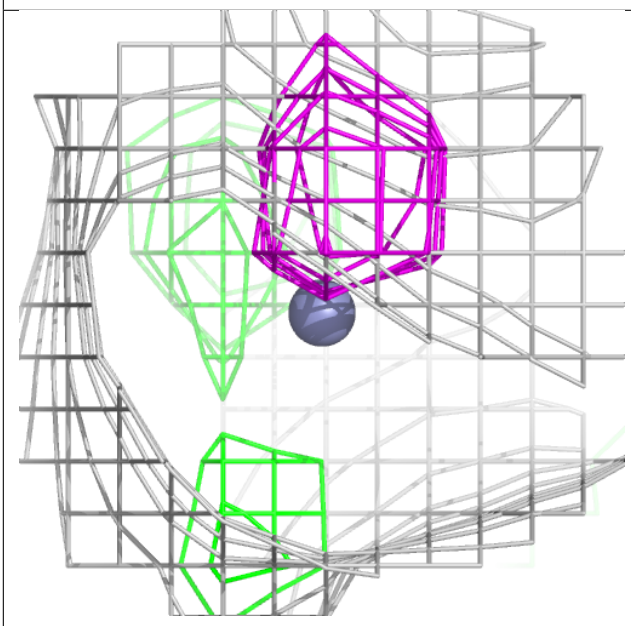
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

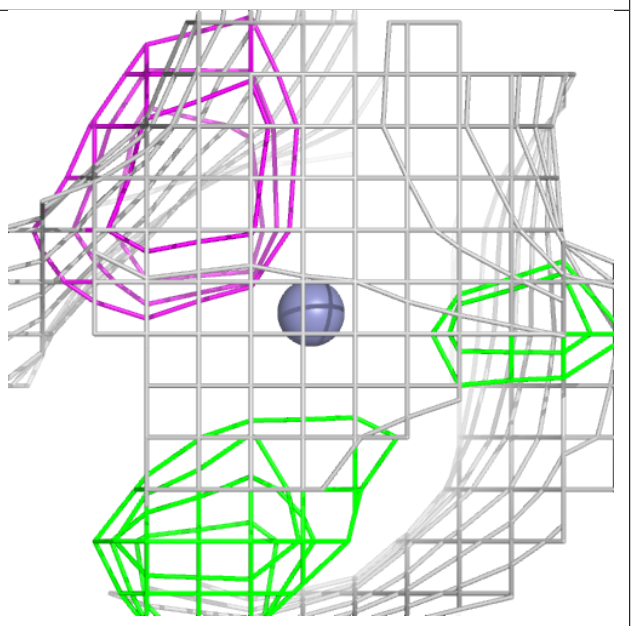


Electron density around ZN B 1304:

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

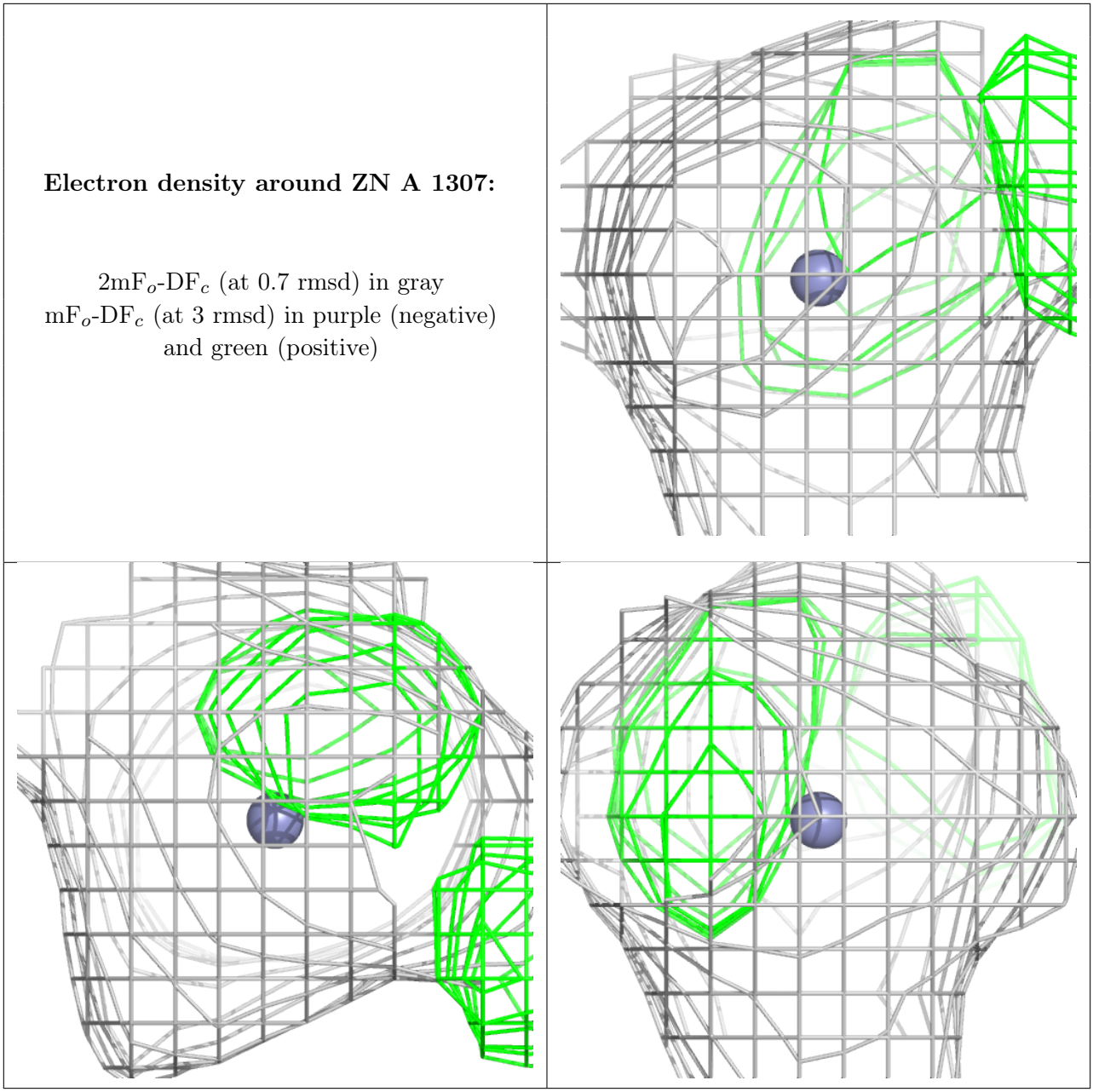






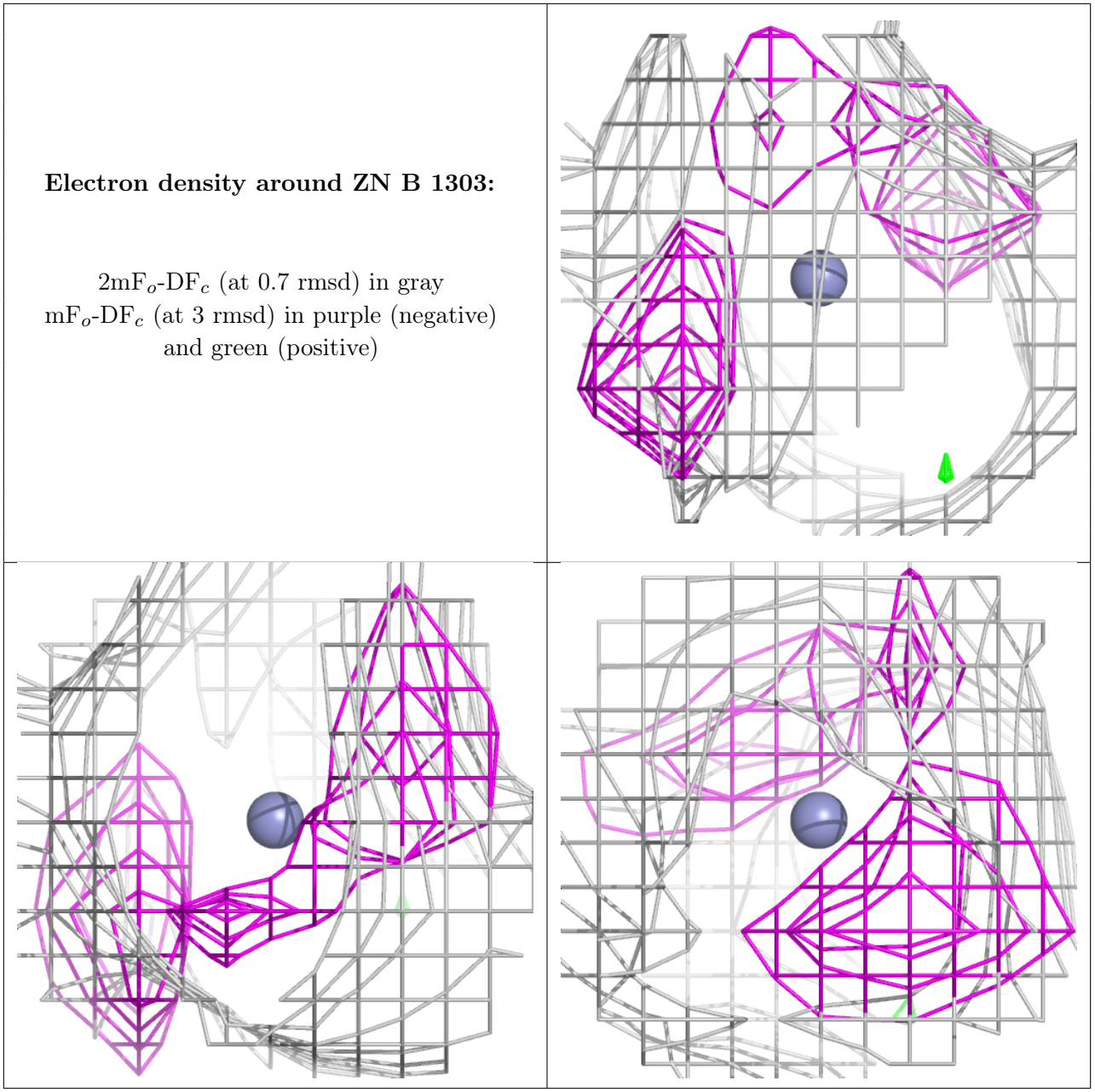
Electron density around ZN A 1307:

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



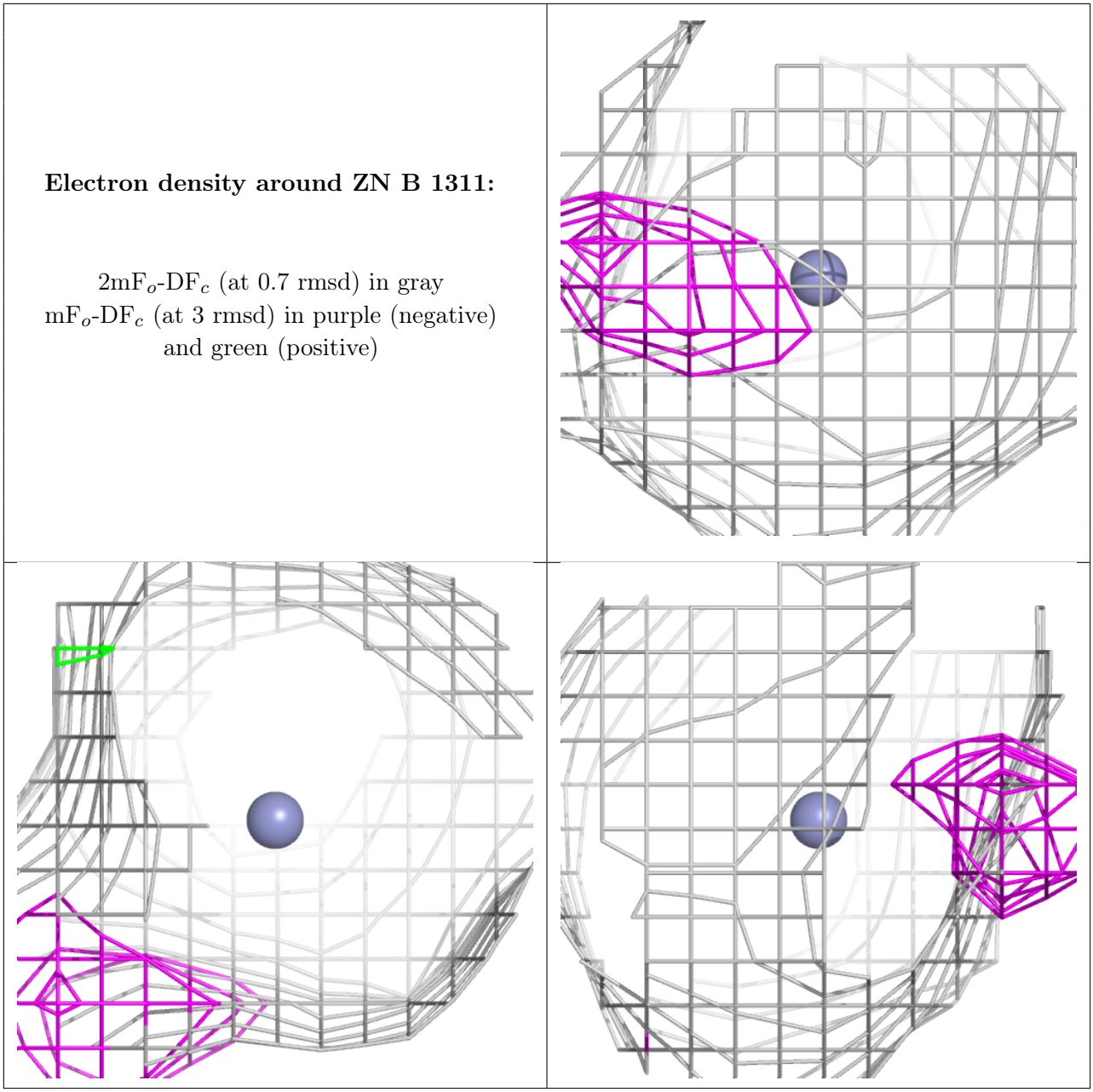
Electron density around ZN B 1303:

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



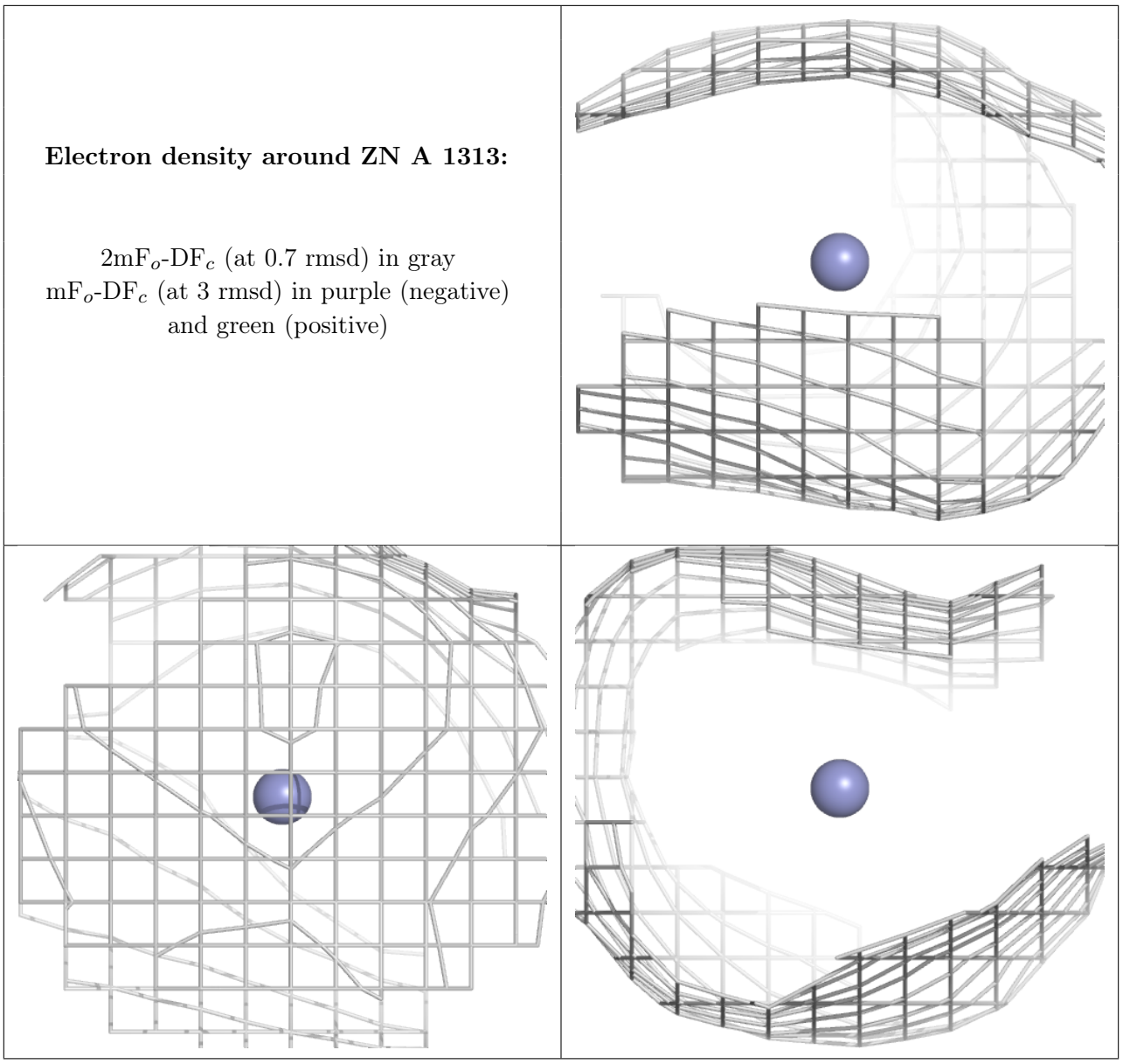
Electron density around ZN B 1311:

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



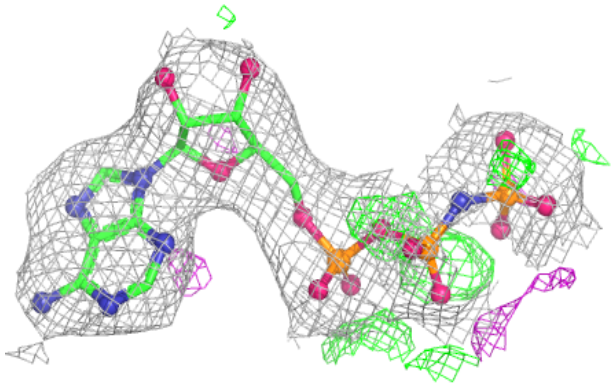
Electron density around ZN A 1313:

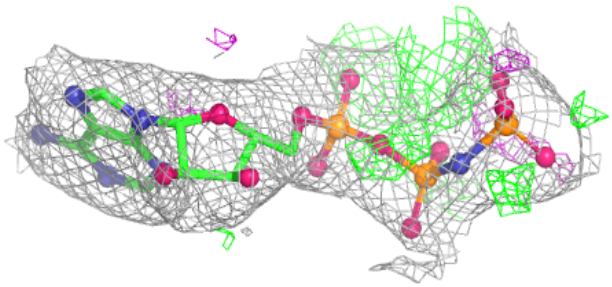
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

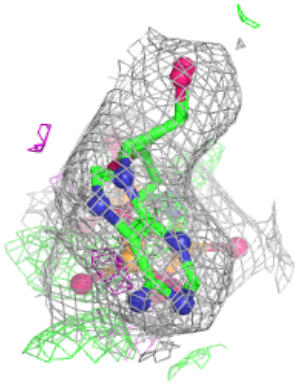


Electron density around ANP A 1301:

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

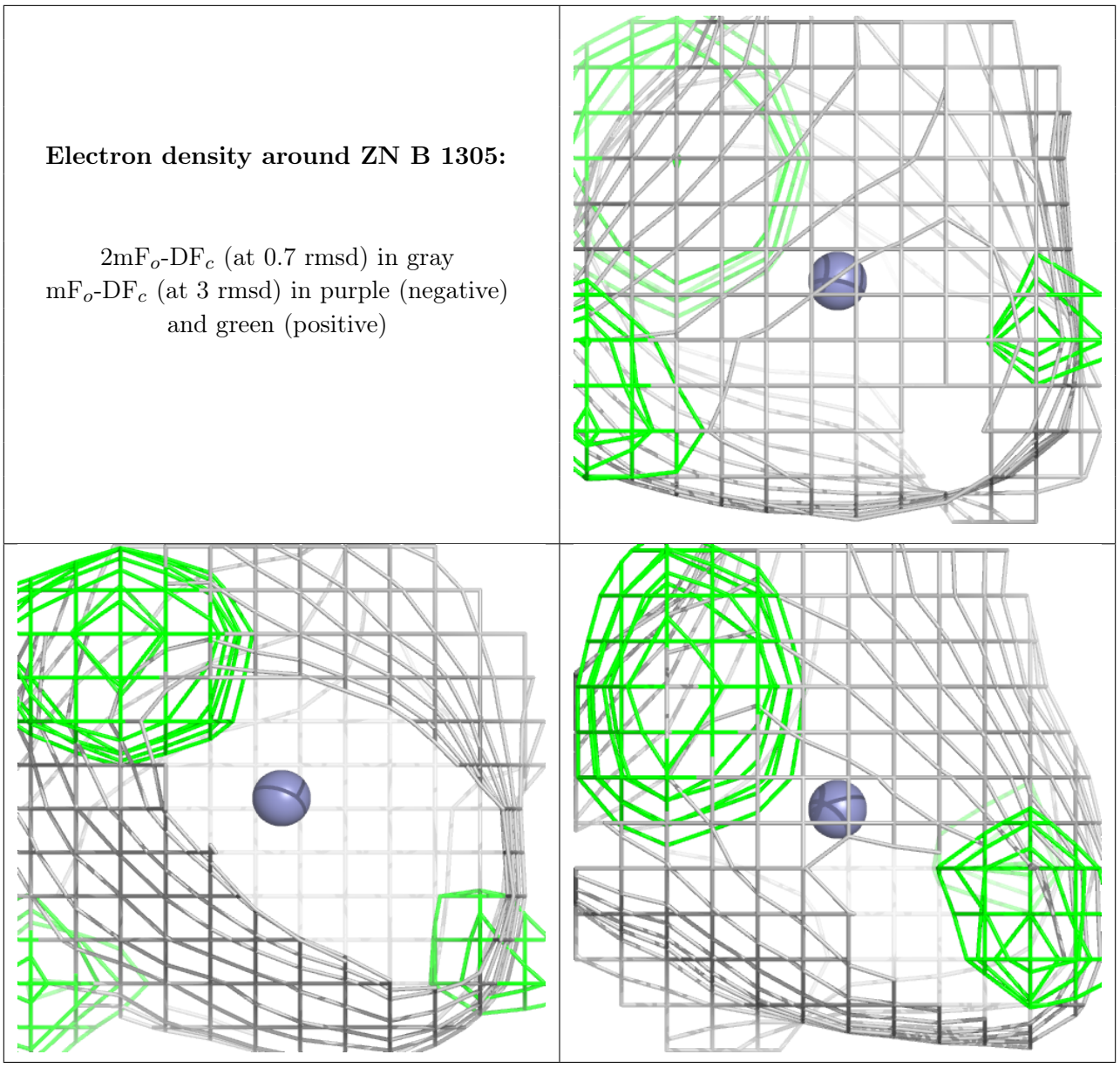






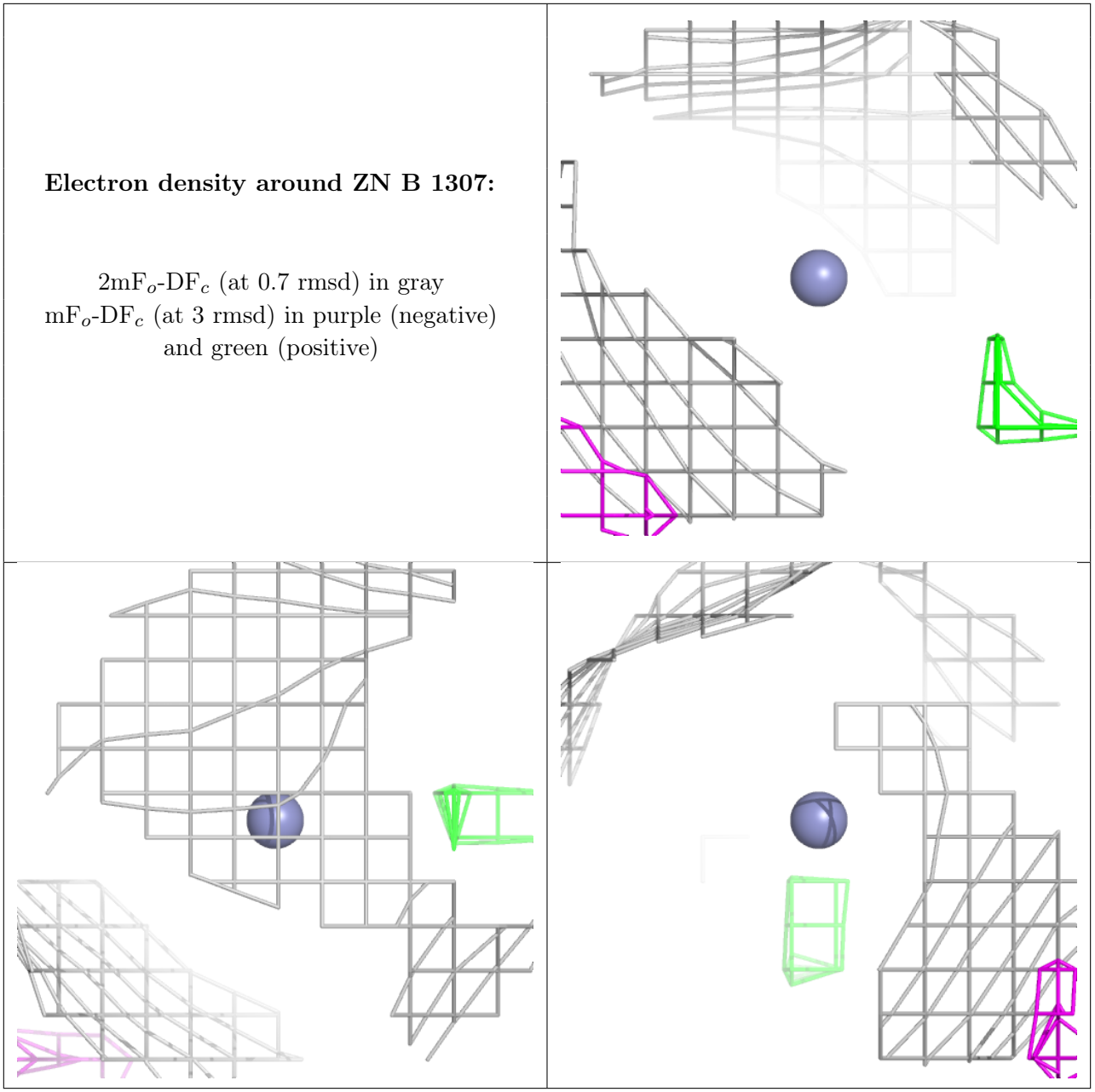
Electron density around ZN B 1305:

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



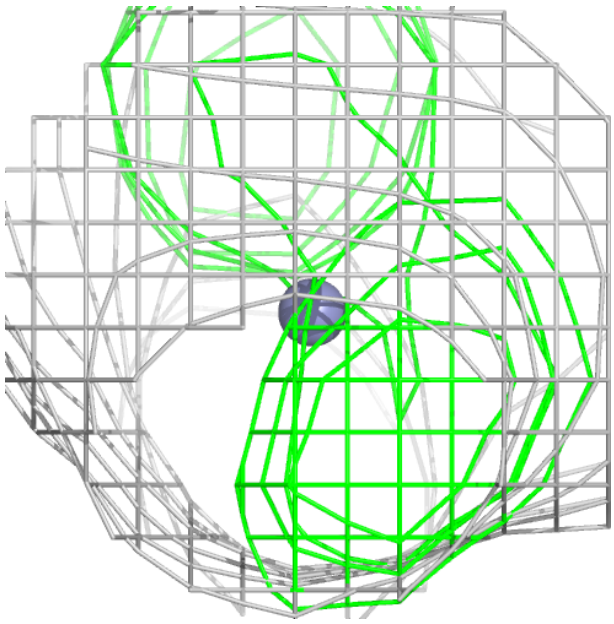
Electron density around ZN B 1307:

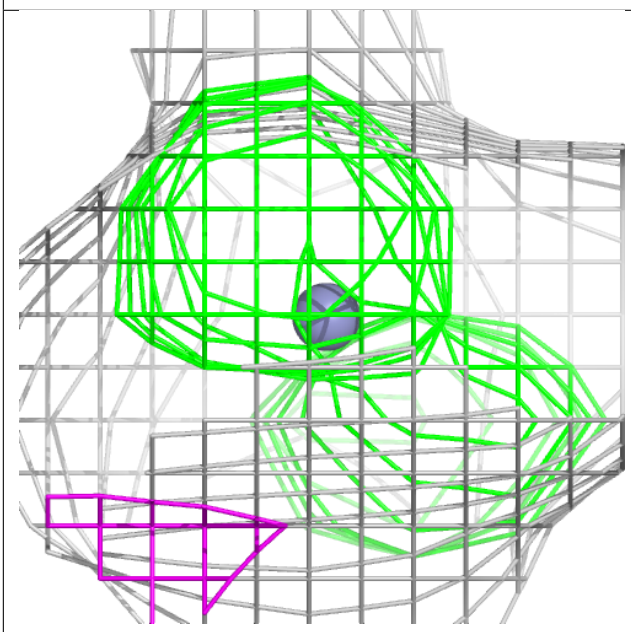
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

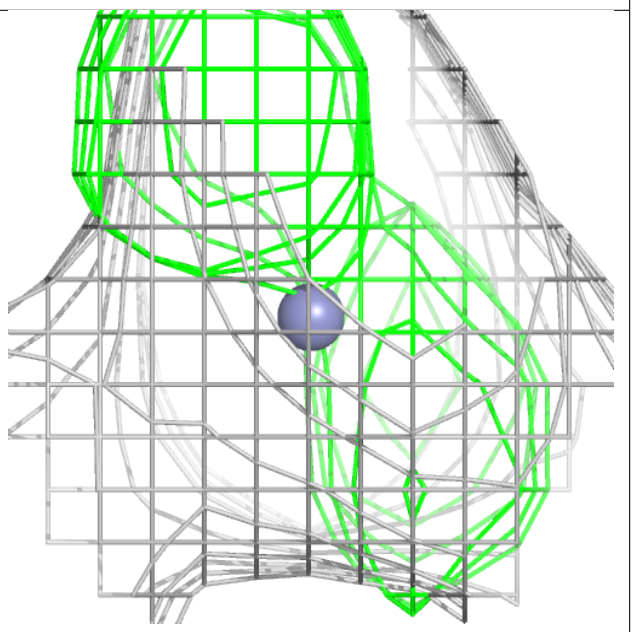


Electron density around ZN B 1308:

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

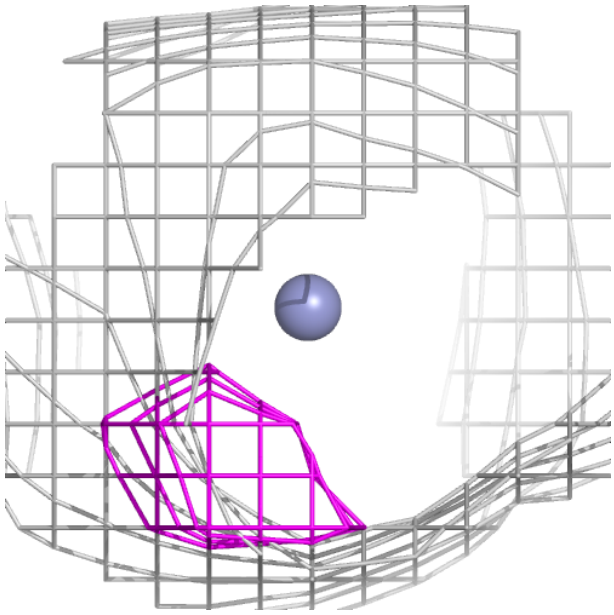


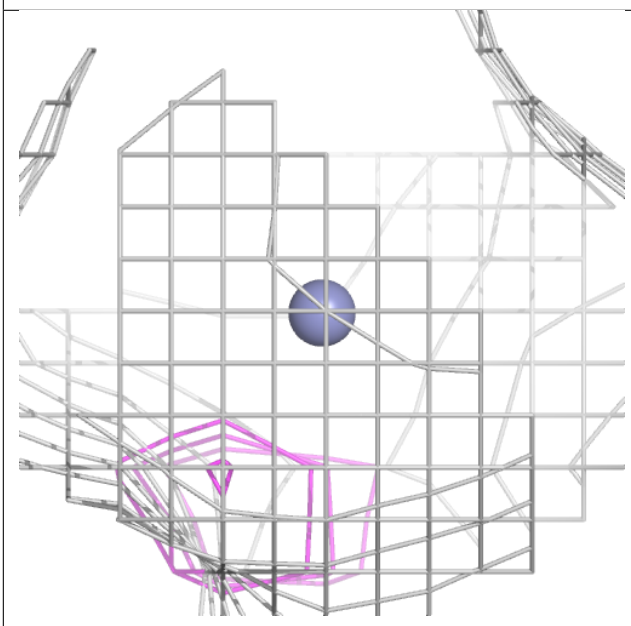


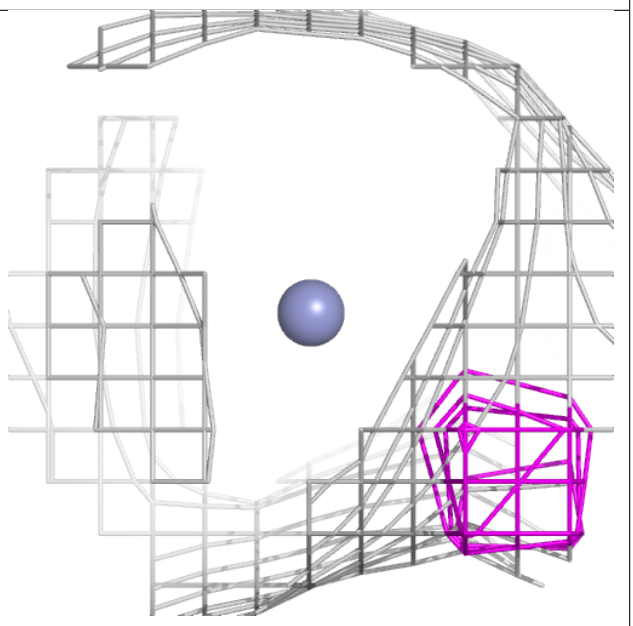


Electron density around ZN B 1309:

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

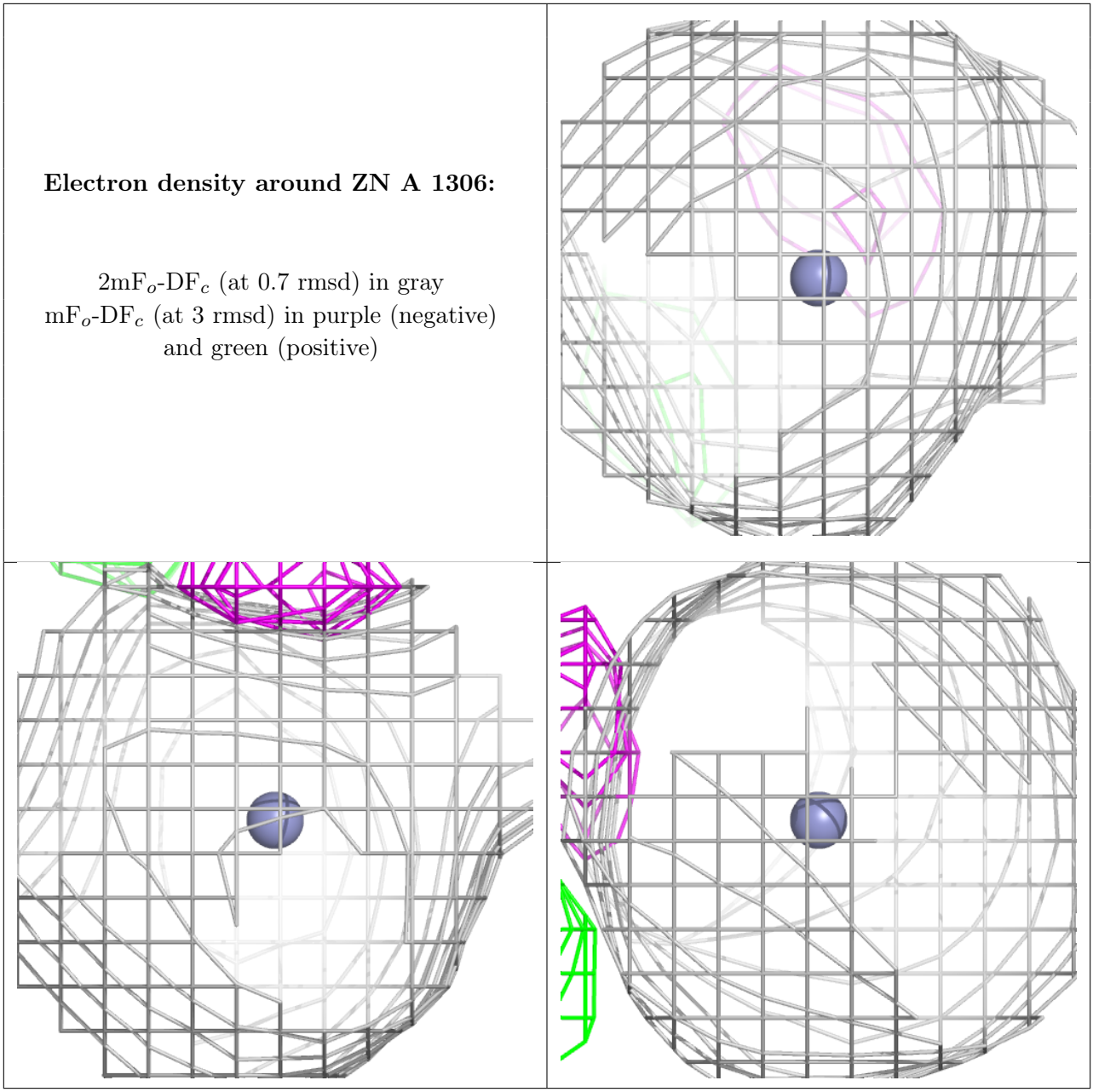






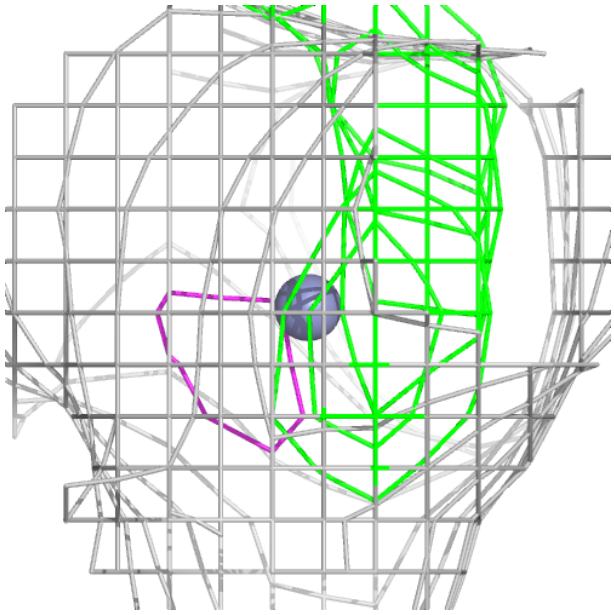
Electron density around ZN A 1306:

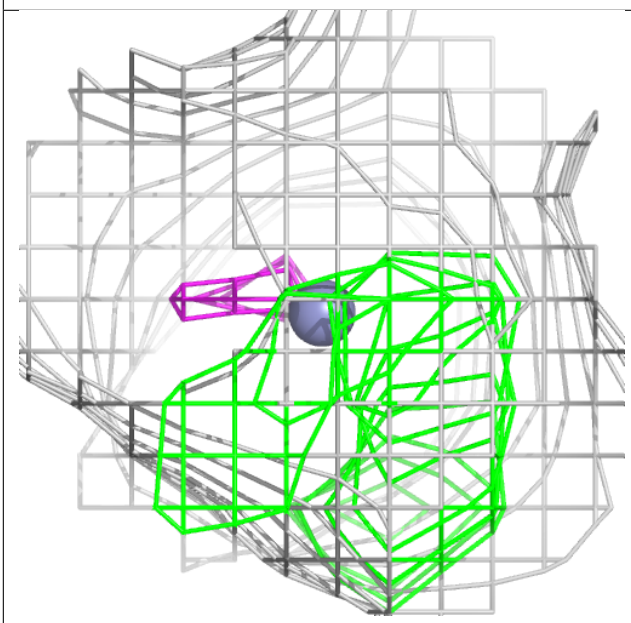
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

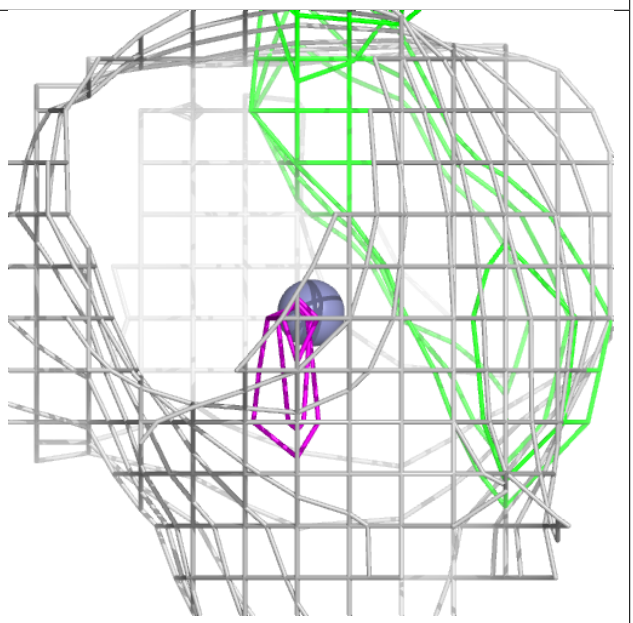


Electron density around ZN A 1304:

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

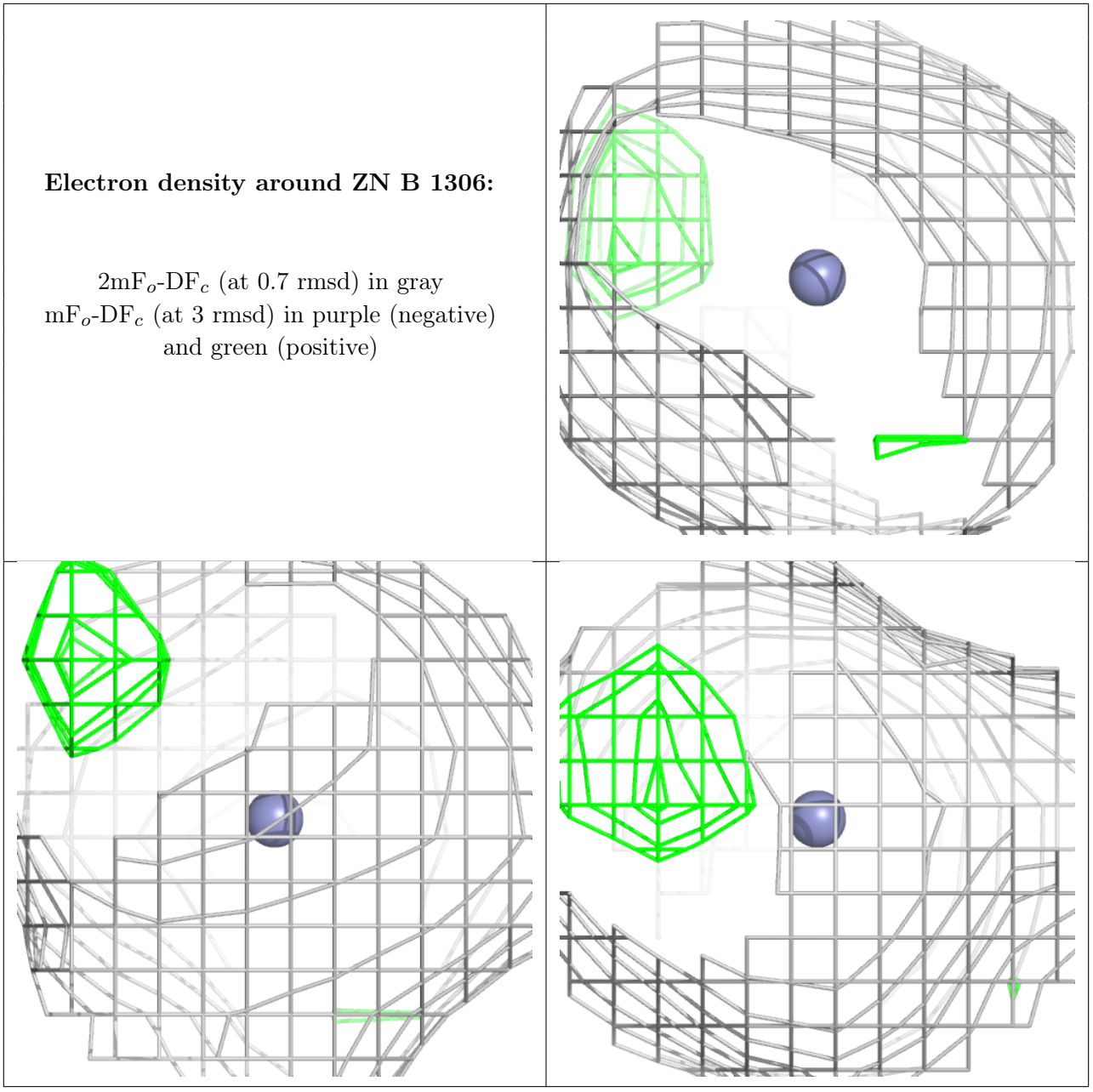






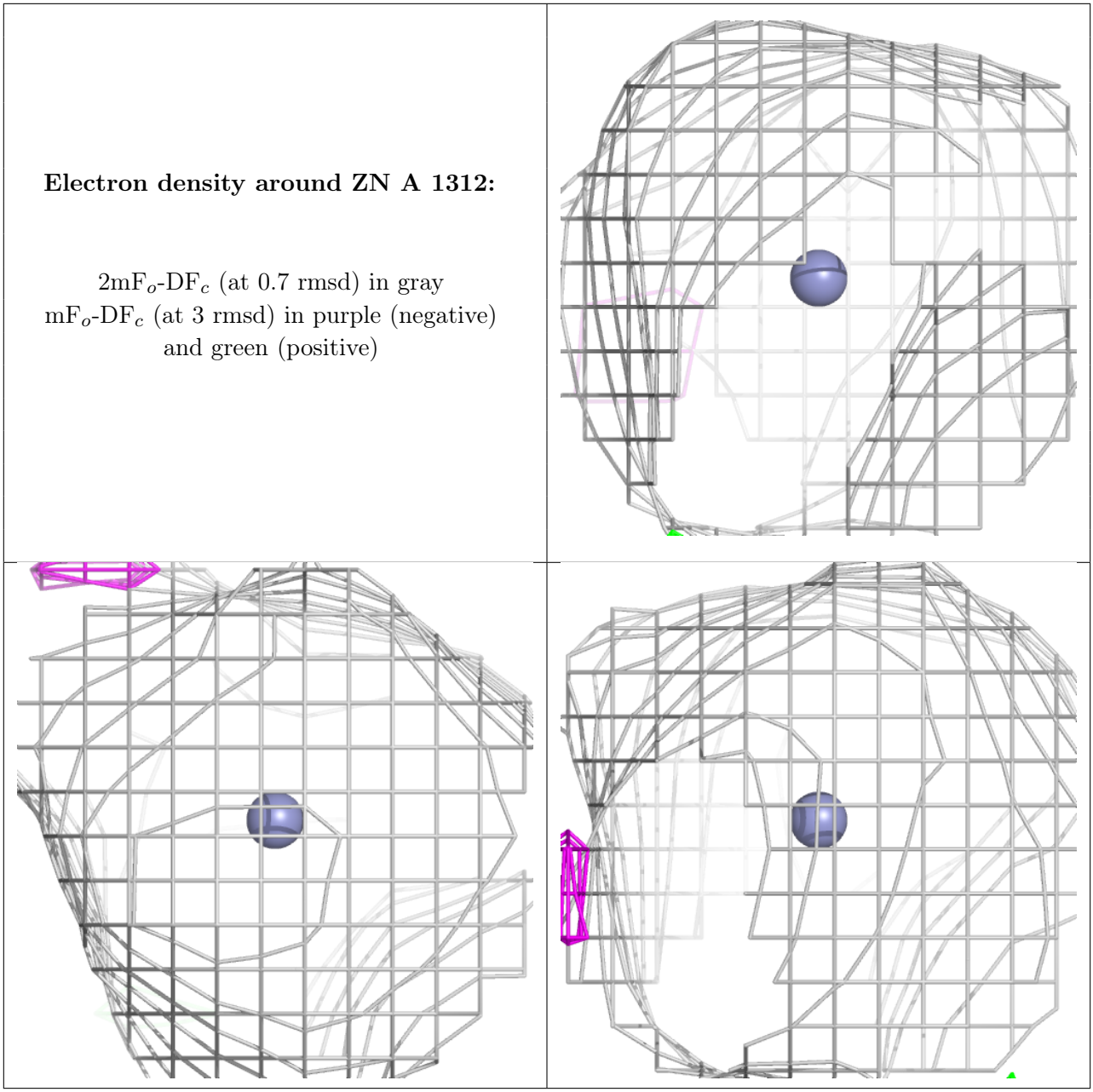
Electron density around ZN B 1306:

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



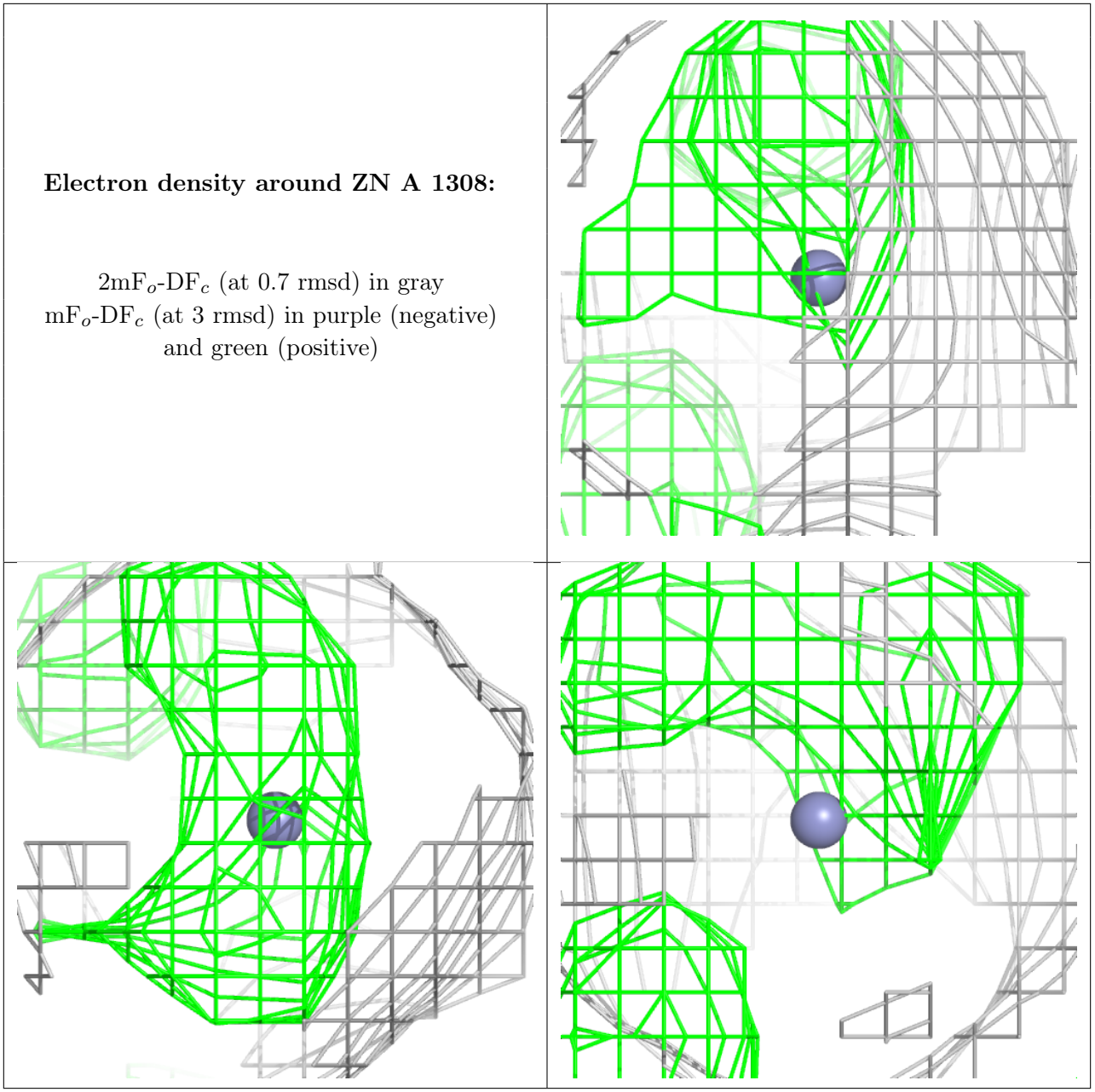
Electron density around ZN A 1312:

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



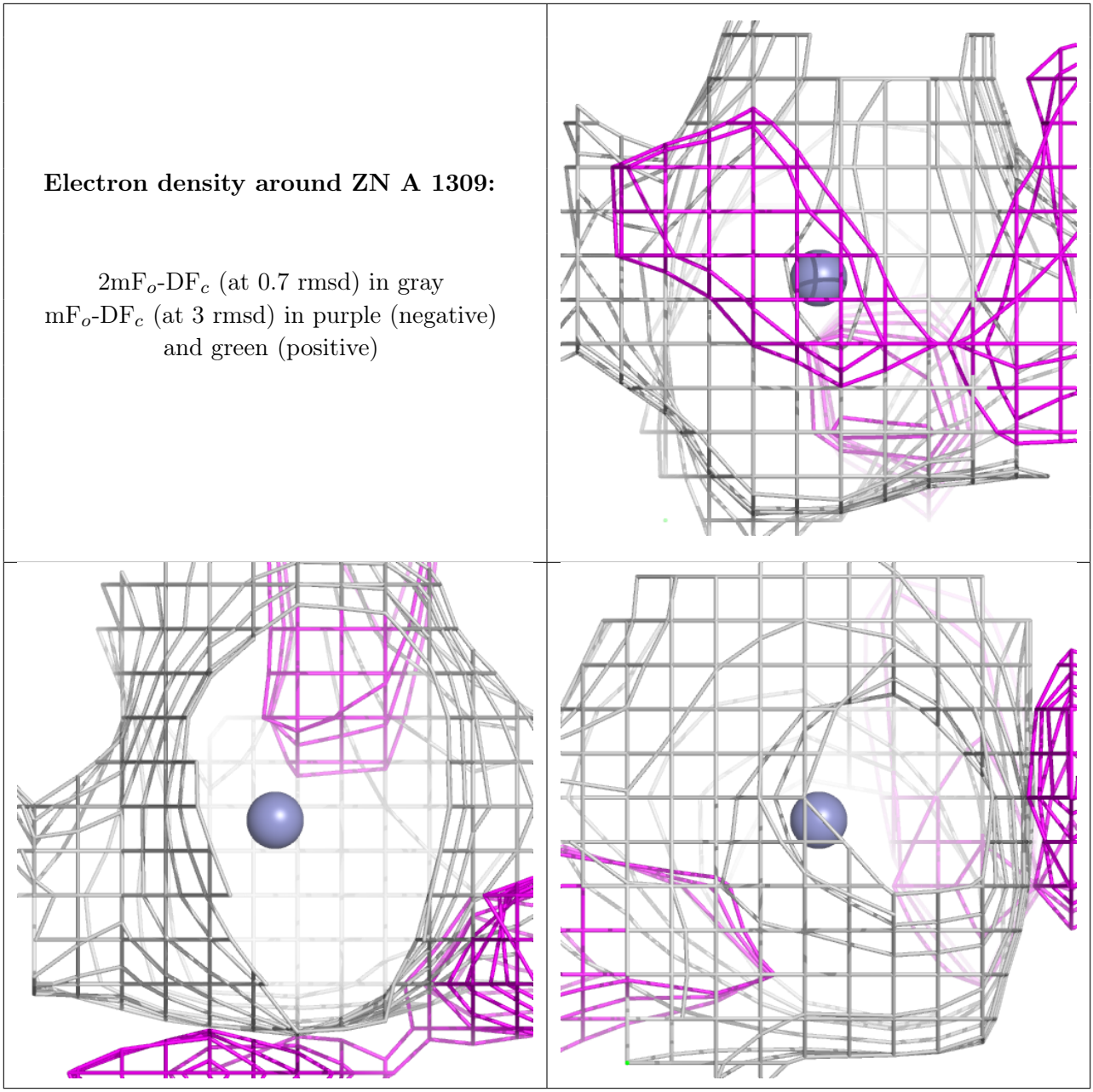
Electron density around ZN A 1308:

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



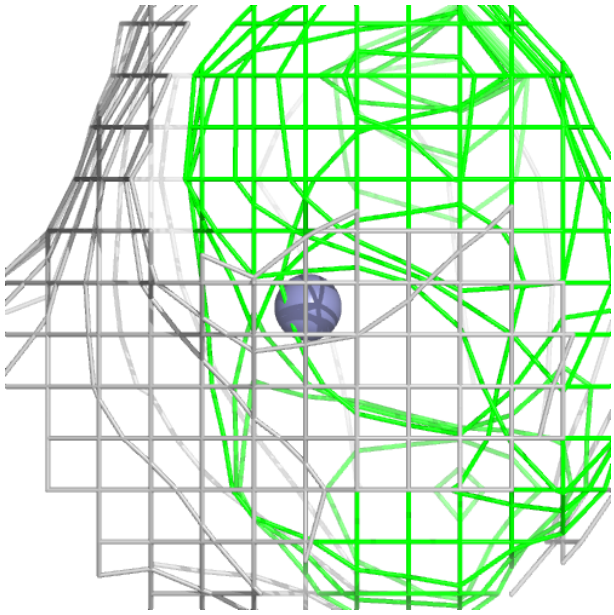
Electron density around ZN A 1309:

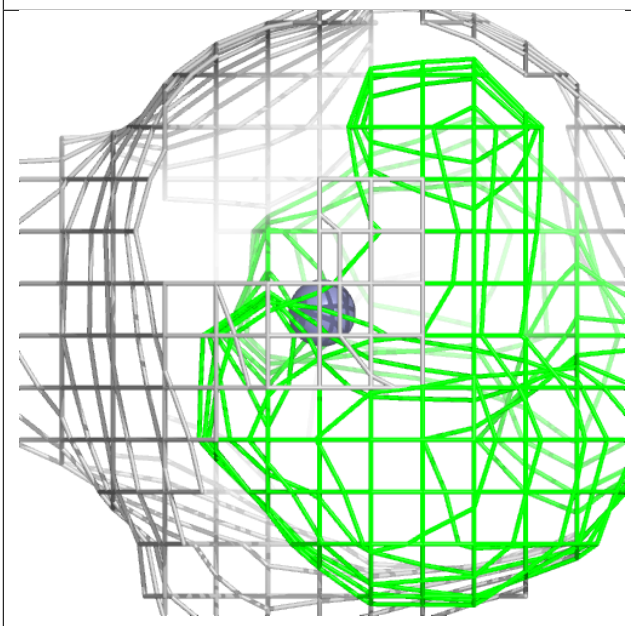
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

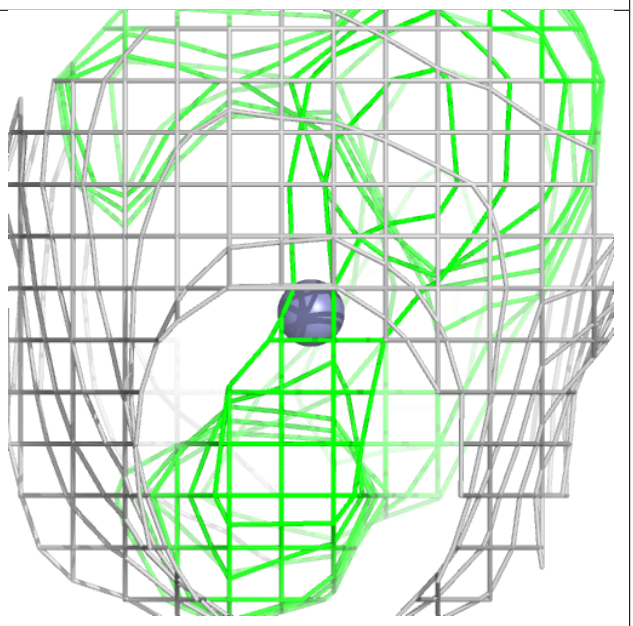


Electron density around ZN A 1310:

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

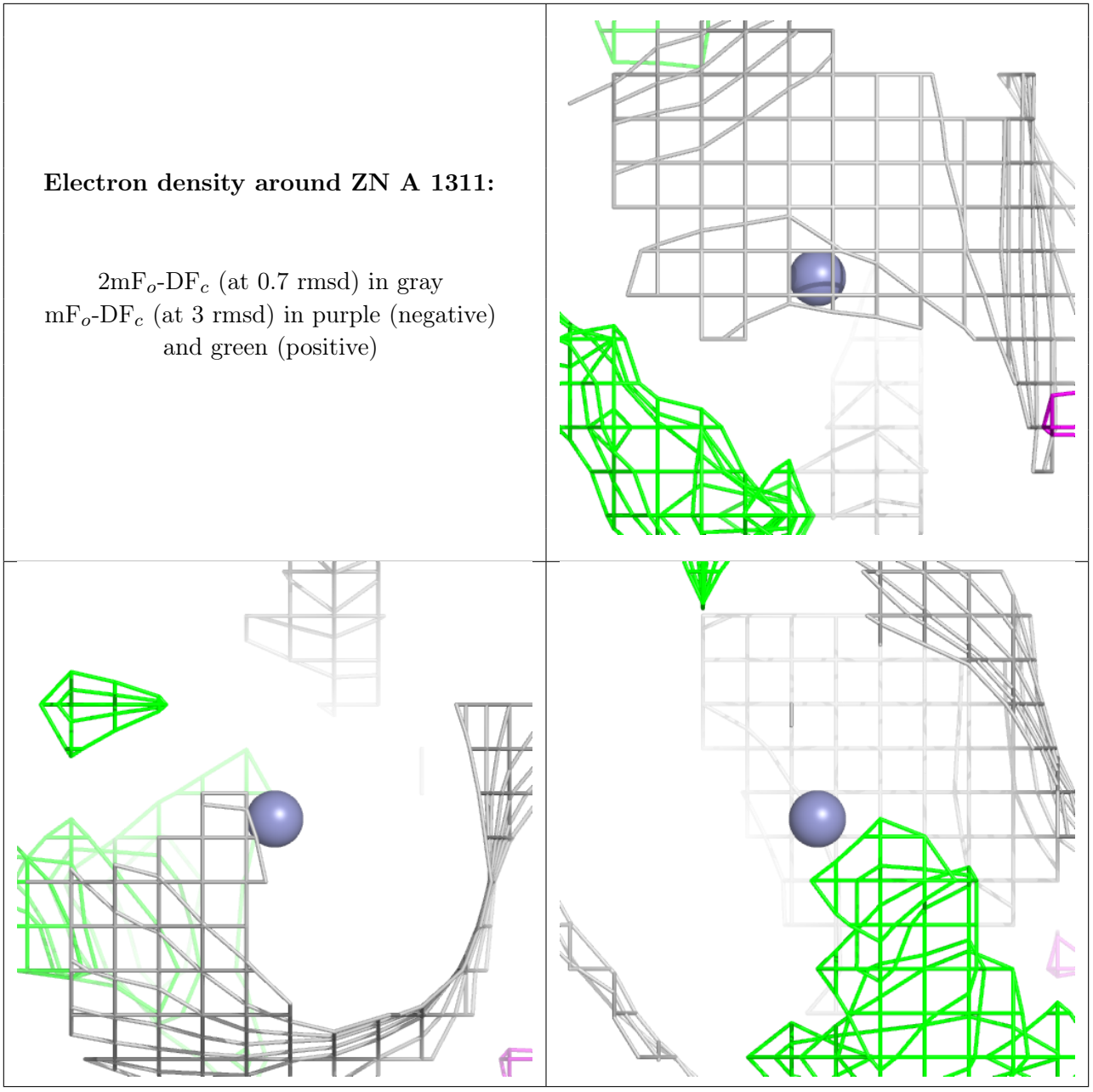






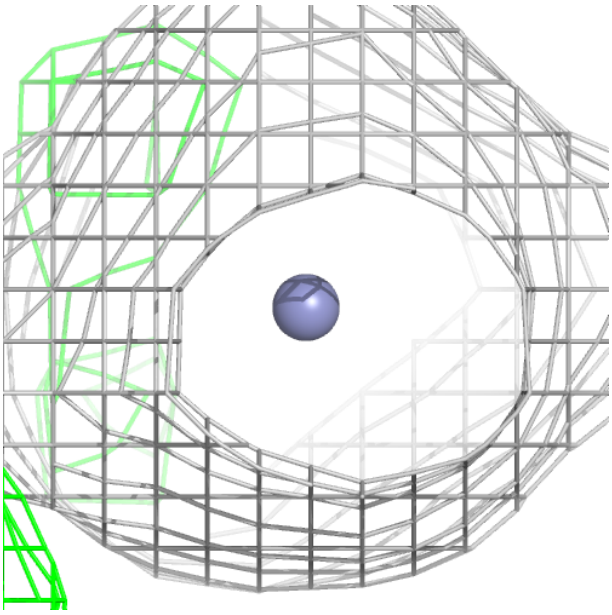
Electron density around ZN A 1311:

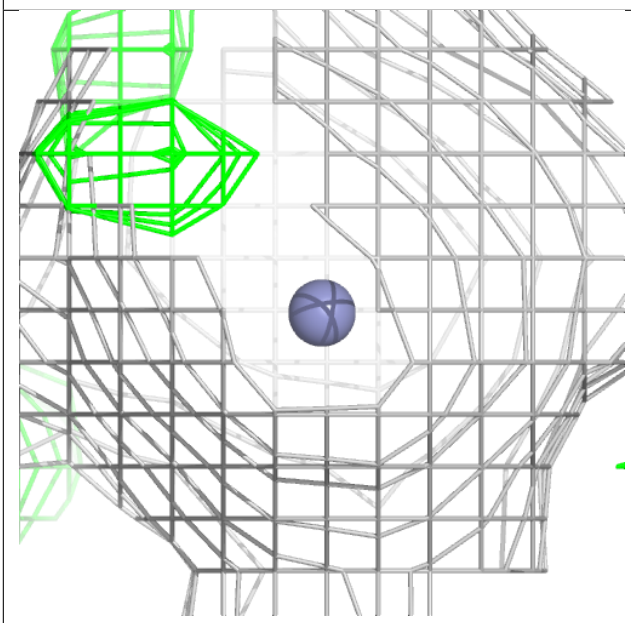
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

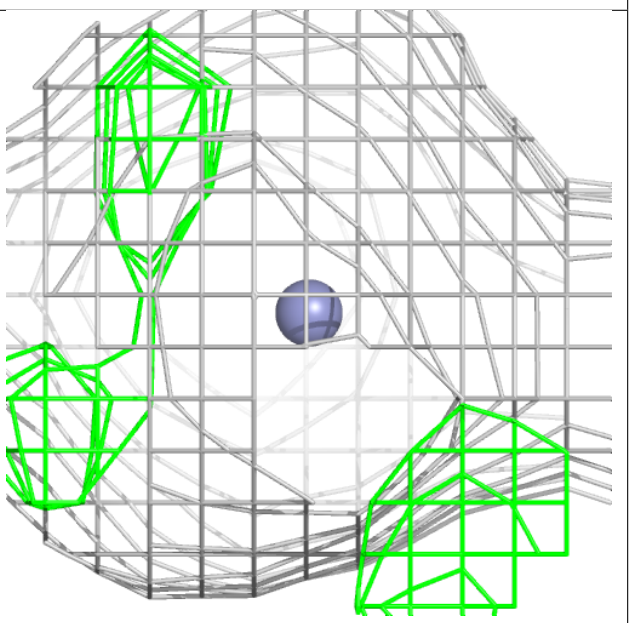


Electron density around ZN A 1305:

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

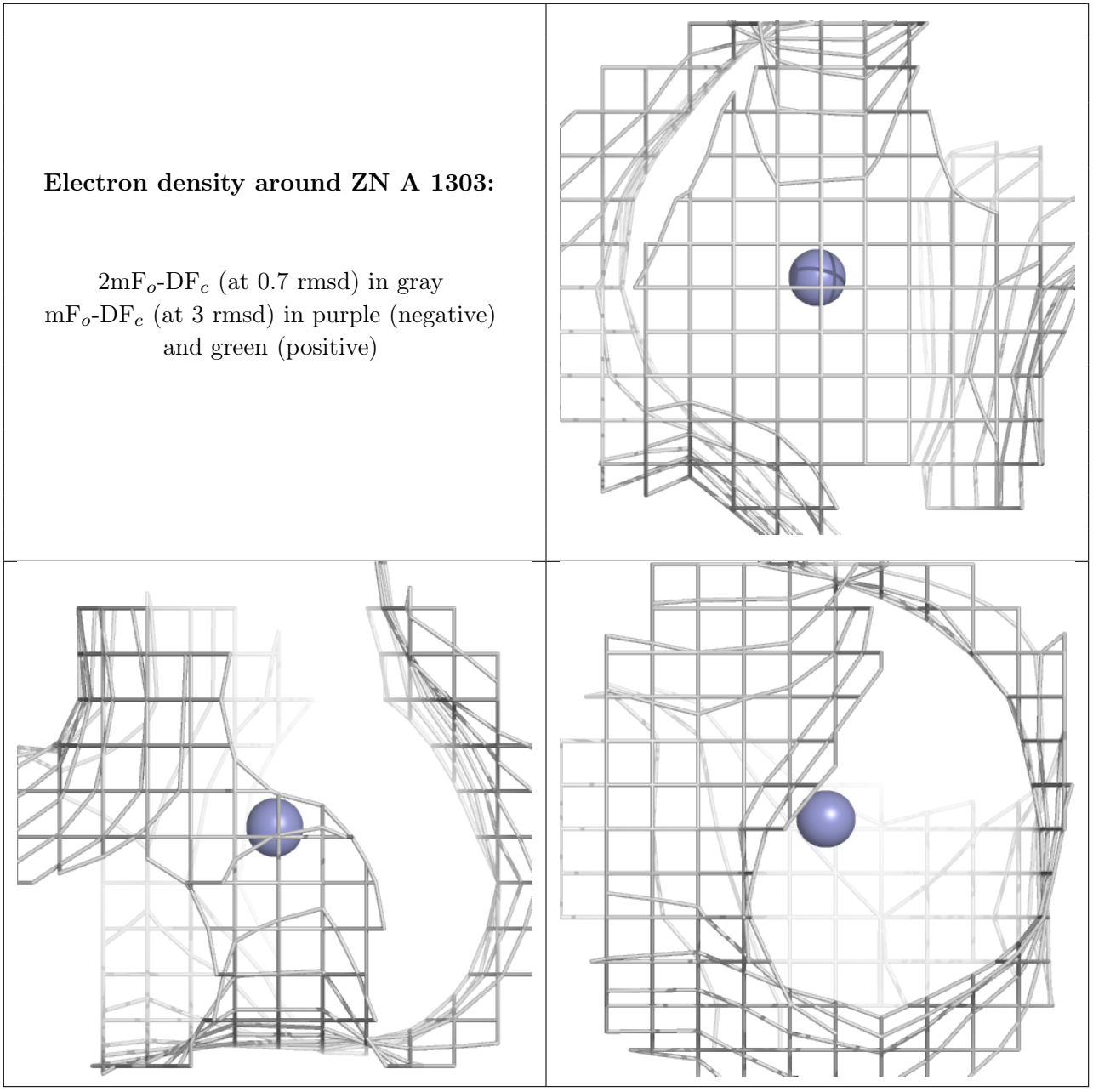






Electron density around ZN A 1303:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
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.