

IASI L0 and L1 Daily Monitoring Report **Metop-C**

IASI monitoring team

23/04/2025 00:00:00 - 24/04/2025 00:00:00

1 Introduction

This report provides summary monitoring plots and figures from IASI instrument on the Metop-C satellite retrieved from the IASI L0 and L1 ENG product (3 minutes data packet) for 23/04/2025 00:00:00 - 24/04/2025 00:00:00 .

The monitoring data are extracted on PDU basis.

2 Data quantity 23/04/2025 00:00:00 - 24/04/2025 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	451	e
L0 IASI PDUs	327	e
L1 ENG PDUs	324	e
L1 ENG distinct GEPSGranule	321	a
L1 DPX PDUs (RM: IASI-HIRS)	0	e
L1 DPS Files (RM: OBS-CAL NWP based)	324	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	6645	6647	20250423221548.321	20250423221548.755
PX1 (130)	6718	6720	20250423221607.130	20250423221607.563
PX1 (130)	6756	6758	20250423221618.372	20250423221618.805
PX1 (130)	6765	6767	20250423221620.321	20250423221620.751
PX1 (130)	6771	6773	20250423221621.618	20250423221622.048
PX1 (130)	6783	6785	20250423221624.212	20250423221626.157
PX1 (130)	6842	6844	20250423221639.993	20250423221641.942
PX1 (130)	6845	6855	20250423221642.157	20250423221644.317
PX1 (130)	6855	6857	20250423221644.317	20250423221644.751
PX1 (130)	6857	6860	20250423221644.751	20250423221645.399
PX1 (130)	6860	6864	20250423221645.399	20250423221646.266
PX1 (130)	6865	6867	20250423221646.481	20250423221646.915
PX1 (130)	6867	6874	20250423221646.915	20250423221649.942
PX1 (130)	6874	6876	20250423221649.942	20250423221650.372
PX1 (130)	6876	6878	20250423221650.372	20250423221650.805
PX1 (130)	6878	6880	20250423221650.805	20250423221651.239
PX1 (130)	6881	6883	20250423221651.454	20250423221651.887
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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	6886	6888	20250423221652.536	20250423221652.966
PX1 (130)	6895	6897	20250423221654.481	20250423221654.915
PX1 (130)	6903	6910	20250423221656.212	20250423221659.239
PX1 (130)	6910	6928	20250423221659.239	20250423221703.130
PX1 (130)	6928	6946	20250423221703.130	20250423221708.536
PX1 (130)	6946	6997	20250423221708.536	20250423221722.587
PX1 (130)	6997	6999	20250423221722.587	20250423221723.020
PX1 (130)	6999	7010	20250423221723.020	20250423221725.399
PX1 (130)	7010	11378	20250423221725.399	20250423234939.672
PX2 (135)	6622	6624	20250423221541.833	20250423221542.266
PX2 (135)	6771	6773	20250423221621.618	20250423221622.048
PX2 (135)	6784	6786	20250423221625.942	20250423221626.372
PX2 (135)	6836	6838	20250423221638.696	20250423221639.130
PX2 (135)	6842	6844	20250423221639.993	20250423221641.942
PX2 (135)	6844	6846	20250423221641.942	20250423221642.372
PX2 (135)	6846	6849	20250423221642.372	20250423221643.020
PX2 (135)	6850	6852	20250423221643.239	20250423221643.669
PX2 (135)	6853	6862	20250423221643.887	20250423221645.833
PX2 (135)	6862	6866	20250423221645.833	20250423221646.696
PX2 (135)	6866	6871	20250423221646.696	20250423221647.778
PX2 (135)	6872	6877	20250423221647.993	20250423221650.591
PX2 (135)	6878	6881	20250423221650.805	20250423221651.454
PX2 (135)	6887	6889	20250423221652.751	20250423221653.184
PX2 (135)	6890	6892	20250423221653.399	20250423221653.833
PX2 (135)	6893	6896	20250423221654.048	20250423221654.696
PX2 (135)	6899	6901	20250423221655.344	20250423221655.778
PX2 (135)	6902	6906	20250423221655.993	20250423221658.372
PX2 (135)	6907	6910	20250423221658.591	20250423221659.239
PX2 (135)	6910	6937	20250423221659.239	20250423221706.591
PX2 (135)	6937	6948	20250423221706.591	20250423221708.966
PX2 (135)	6949	6959	20250423221709.184	20250423221711.344
PX2 (135)	6959	6962	20250423221711.344	20250423221711.993
PX2 (135)	6962	6969	20250423221711.993	20250423221715.020
PX2 (135)	6969	6976	20250423221715.020	20250423221716.536
PX2 (135)	6976	6998	20250423221716.536	20250423221722.805
PX2 (135)	6998	7000	20250423221722.805	20250423221723.235
PX2 (135)	7000	7002	20250423221723.235	20250423221723.669
PX2 (135)	7002	7006	20250423221723.669	20250423221724.536
PX2 (135)	7006	7015	20250423221724.536	20250423221726.481
PX2 (135)	7015	11378	20250423221726.481	20250423234939.672
PX3 (140)	6685	6687	20250423221558.481	20250423221558.915
PX3 (140)	6730	6732	20250423221611.239	20250423221611.673
PX3 (140)	6773	6775	20250423221622.048	20250423221622.481
PX3 (140)	6841	6843	20250423221639.778	20250423221640.212
PX3 (140)	6843	6847	20250423221640.212	20250423221642.591
PX3 (140)	6847	6850	20250423221642.591	20250423221643.239
PX3 (140)	6851	6857	20250423221643.454	20250423221644.751
PX3 (140)	6857	6859	20250423221644.751	20250423221645.184
PX3 (140)	6859	6861	20250423221645.184	20250423221645.618
PX3 (140)	6861	6863	20250423221645.618	20250423221646.048
PX3 (140)	6864	6869	20250423221646.266	20250423221647.344
PX3 (140)	6869	6871	20250423221647.344	20250423221647.778
PX3 (140)	6873	6875	20250423221648.212	20250423221650.157

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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX3 (140)	6875	6877	20250423221650.157	20250423221650.591
PX3 (140)	6880	6882	20250423221651.239	20250423221651.669
PX3 (140)	6885	6887	20250423221652.317	20250423221652.751
PX3 (140)	6887	6890	20250423221652.751	20250423221653.399
PX3 (140)	6893	6895	20250423221654.048	20250423221654.481
PX3 (140)	6895	6899	20250423221654.481	20250423221655.344
PX3 (140)	6899	6902	20250423221655.344	20250423221655.993
PX3 (140)	6902	6904	20250423221655.993	20250423221657.942
PX3 (140)	6904	6911	20250423221657.942	20250423221659.454
PX3 (140)	6911	6913	20250423221659.454	20250423221659.887
PX3 (140)	6913	6936	20250423221659.887	20250423221706.372
PX3 (140)	6936	6940	20250423221706.372	20250423221707.239
PX3 (140)	6940	6944	20250423221707.239	20250423221708.102
PX3 (140)	6944	6947	20250423221708.102	20250423221708.751
PX3 (140)	6949	6953	20250423221709.184	20250423221710.048
PX3 (140)	6953	6970	20250423221710.048	20250423221715.239
PX3 (140)	6970	6999	20250423221715.239	20250423221723.020
PX3 (140)	7000	7008	20250423221723.235	20250423221724.966
PX3 (140)	7008	7014	20250423221724.966	20250423221726.262
PX3 (140)	7014	11378	20250423221726.262	20250423234939.672
PX4 (145)	6655	6657	20250423221550.481	20250423221550.915
PX4 (145)	6721	6723	20250423221607.778	20250423221608.212
PX4 (145)	6770	6772	20250423221621.399	20250423221621.833
PX4 (145)	6822	6824	20250423221635.669	20250423221636.102
PX4 (145)	6840	6843	20250423221639.563	20250423221640.212
PX4 (145)	6843	6846	20250423221640.212	20250423221642.372
PX4 (145)	6846	6851	20250423221642.372	20250423221643.454
PX4 (145)	6851	6864	20250423221643.454	20250423221646.266
PX4 (145)	6865	6869	20250423221646.481	20250423221647.344
PX4 (145)	6869	6872	20250423221647.344	20250423221647.993
PX4 (145)	6875	6877	20250423221650.157	20250423221650.591
PX4 (145)	6880	6882	20250423221651.239	20250423221651.669
PX4 (145)	6883	6887	20250423221651.887	20250423221652.751
PX4 (145)	6888	6891	20250423221652.966	20250423221653.618
PX4 (145)	6893	6895	20250423221654.048	20250423221654.481
PX4 (145)	6897	6899	20250423221654.915	20250423221655.344
PX4 (145)	6899	6904	20250423221655.344	20250423221657.942
PX4 (145)	6906	6923	20250423221658.372	20250423221702.048
PX4 (145)	6923	6937	20250423221702.048	20250423221706.591
PX4 (145)	6937	6953	20250423221706.591	20250423221710.048
PX4 (145)	6953	6972	20250423221710.048	20250423221715.669
PX4 (145)	6972	6995	20250423221715.669	20250423221722.157
PX4 (145)	6995	7004	20250423221722.157	20250423221724.102
PX4 (145)	7005	11377	20250423221724.317	20250423234939.457
IMG (150)	1441	1443	20250423221606.915	20250423221607.348
IMG (150)	1452	1454	20250423221609.942	20250423221610.376
IMG (150)	1508	1510	20250423221622.696	20250423221623.130
IMG (150)	1572	1574	20250423221637.833	20250423221638.266
IMG (150)	1585	1587	20250423221640.860	20250423221641.509
IMG (150)	1588	1590	20250423221641.942	20250423221642.372
IMG (150)	1591	1600	20250423221642.591	20250423221644.536
IMG (150)	1600	1603	20250423221644.536	20250423221645.184
IMG (150)	1603	1608	20250423221645.184	20250423221646.266
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Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
IMG (150)	1608	1612	20250423221646.266	20250423221647.130
IMG (150)	1612	1614	20250423221647.130	20250423221647.563
IMG (150)	1615	1619	20250423221647.778	20250423221648.860
IMG (150)	1625	1627	20250423221650.591	20250423221651.020
IMG (150)	1628	1630	20250423221651.239	20250423221651.669
IMG (150)	1630	1633	20250423221651.669	20250423221652.317
IMG (150)	1643	1645	20250423221654.481	20250423221654.915
IMG (150)	1649	1651	20250423221655.778	20250423221656.212
IMG (150)	1651	1653	20250423221656.212	20250423221656.860
IMG (150)	1655	1657	20250423221657.509	20250423221658.157
IMG (150)	1657	1686	20250423221658.157	20250423221704.641
IMG (150)	1687	1690	20250423221704.860	20250423221705.938
IMG (150)	1690	1698	20250423221705.938	20250423221707.669
IMG (150)	1701	1715	20250423221708.317	20250423221711.344
IMG (150)	1715	1730	20250423221711.344	20250423221715.239
IMG (150)	1730	1757	20250423221715.239	20250423221721.508
IMG (150)	1760	1762	20250423221722.372	20250423221722.805
IMG (150)	1762	1765	20250423221722.805	20250423221723.454
IMG (150)	1765	1767	20250423221723.454	20250423221723.887
IMG (150)	1767	1771	20250423221723.887	20250423221724.751
IMG (150)	1771	1774	20250423221724.751	20250423221725.399
IMG (150)	1774	1778	20250423221725.399	20250423221726.262
IMG (150)	1778	8909	20250423221726.262	20250423234939.457
VER (160)	16382	0	20250423004240.312	20250423004248.312
VER (160)	3	16383	20250423004248.312	20250423004248.312
VER (160)	-1	4	20250423004248.312	20250423004256.312
VER (160)	1255	1257	20250423083312.276	20250423144808.255
VER (160)	16381	0	20250423213120.208	20250423213128.208
VER (160)	2	16382	20250423213128.208	20250423213128.208
VER (160)	-1	3	20250423213128.208	20250423213136.208
VER (160)	1672	1676	20250423221600.212	20250423221608.212
VER (160)	1682	1687	20250423221616.212	20250423221624.212
VER (160)	1692	1697	20250423221632.212	20250423221640.212
VER (160)	1697	1702	20250423221640.212	20250423221648.212
VER (160)	1702	1707	20250423221648.212	20250423221656.212
VER (160)	1707	5183	20250423221656.212	20250423234944.211
AUX (180)	6879	6881	20250423221656.641	20250423221712.641
AUX (180)	6882	7575	20250423221720.641	20250423234944.645

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
23/04/2025 00:00:05	-	Normal operation
23/04/2025 08:33:25	Normal operation	Auxiliary ASE synchronised
23/04/2025 08:35:17	Auxiliary ASE synchronised	Heater 2
23/04/2025 14:27:01	Heater 2	Auxiliary ASE synchronised
23/04/2025 14:47:49	Auxiliary ASE synchronised	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

Flag	Value	Action
L0 IASI PDUs	327	e
L1 ENG PDUs	324	e
L1 ENG distinct GEPSGranule	321	a
GQisFlagQual set (PX1)	99.71 %	-
GQisFlagQual set (PX2)	99.75 %	-
GQisFlagQual set (PX3)	99.78 %	-
GQisFlagQual set (PX4)	99.69 %	-
GQisFlagQual set (all)	99.74 %	-

Table 4: Quality flags

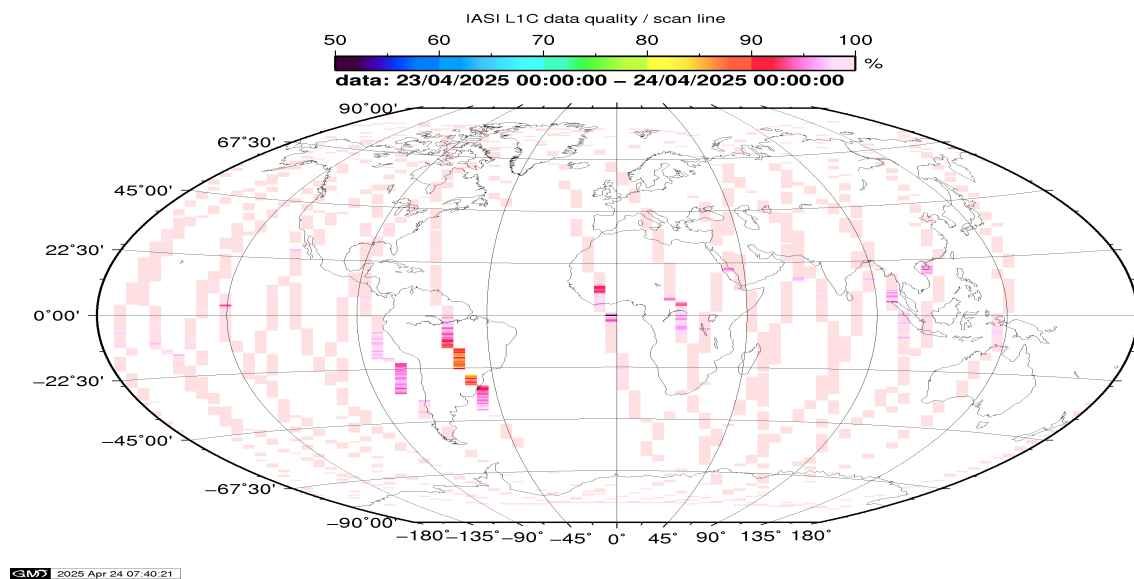


Figure 1: L1C data quality

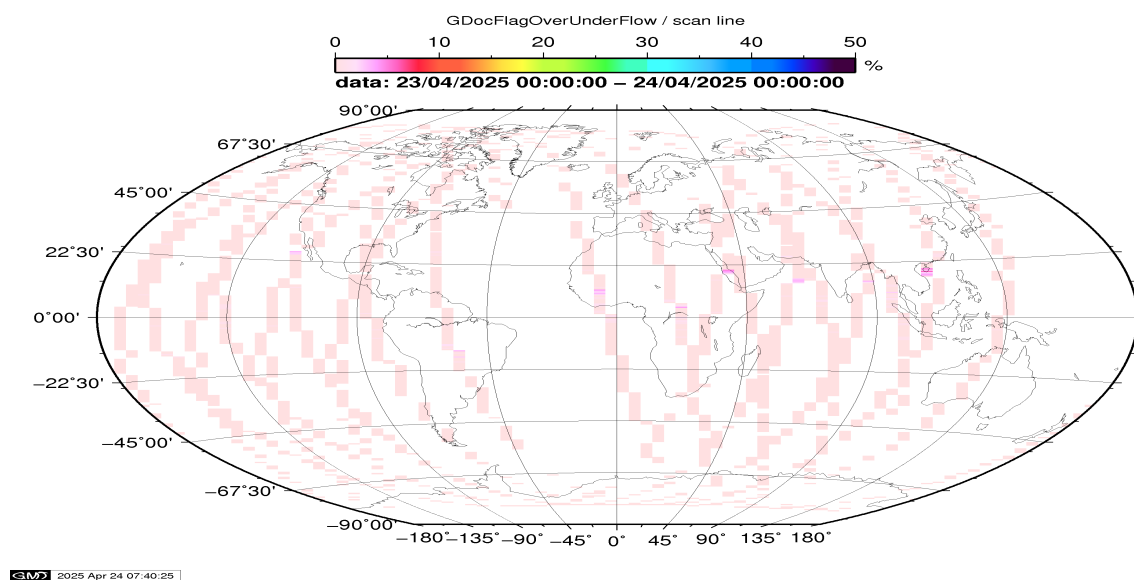


Figure 2: Flag of Over and Under Flows

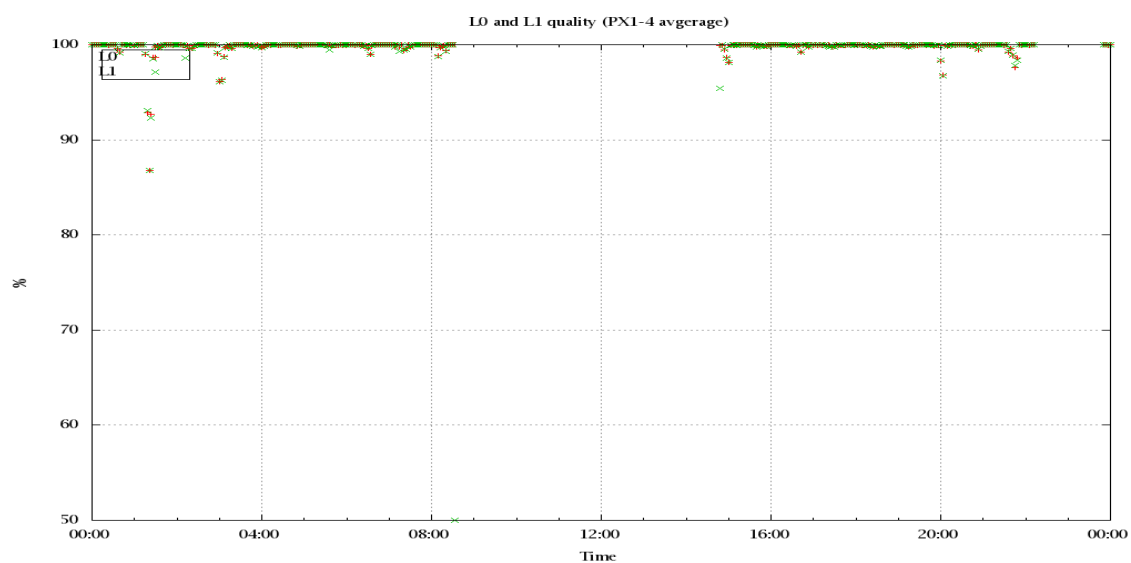


Figure 3: Level 0 and 1C overall quality

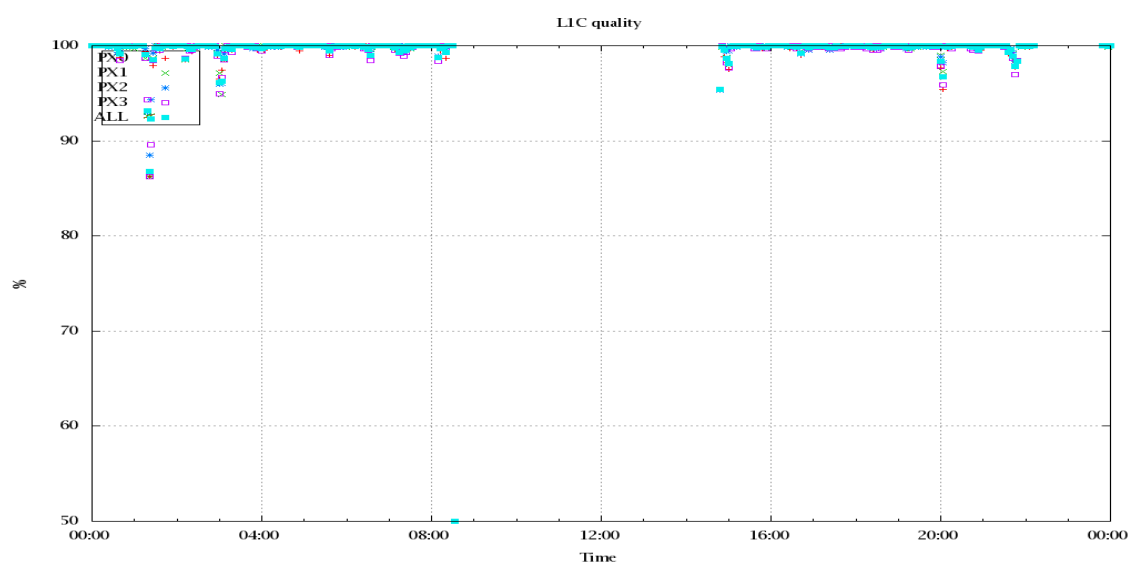


Figure 4: Level 1C quality

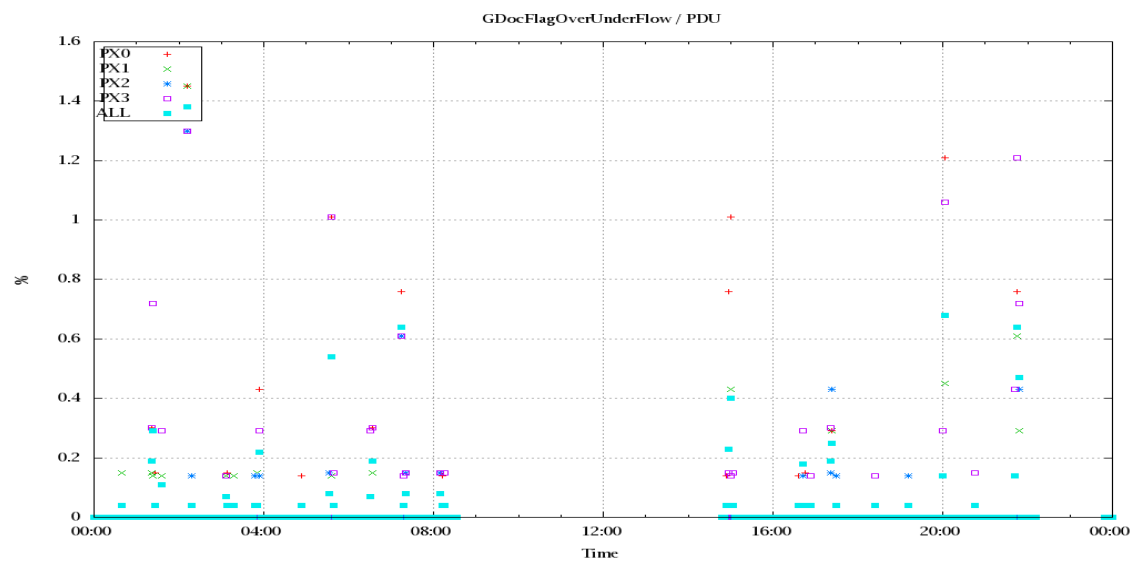


Figure 5: Timeseries of flag of Over and Under Flows

5 Radiance monitoring based on NWP

The radiance monitoring compares the IASI measurements (L1C-eps-products) obtained under clear sky situation over sea with modeled radiances. Cloud identification is based on cloud flag of co-located AVHRR L1B data in addition to information from the IASI L1C clustering analysis here only homogenous situations are taken into account (99.0 percent in first class).

A radiative transfer model (RTM) is feed with co-located ECMWF profiles of T, water vapor and Ozone. Between March 2007 and the 18th of May 2010 RTIASI in Version 4.0 is used. After that date the RTTOV model in V9.3 is used.

Information about the SST is obtained from the AVHRR L1B or taken from AVHRR scenes analysis (CGS only). In the following figures 28 to 34, the so-called radiance anomaly is shown. The radiance anomaly is defined as the difference between the quarter daily radiance average OBS-CAL (over all pixels and scan positions 10 to 20) and the average bias OBS-CAL (over all pixels and scan positions 10 to 20) of the last 30 days.

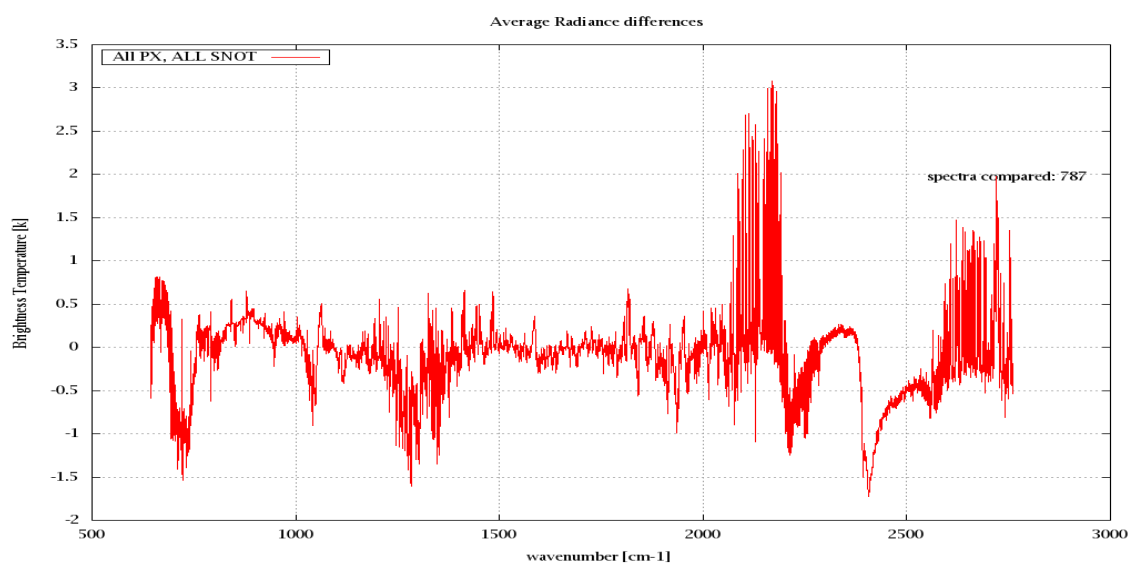


Figure 6: Average Radiance differences: OBS-CAL

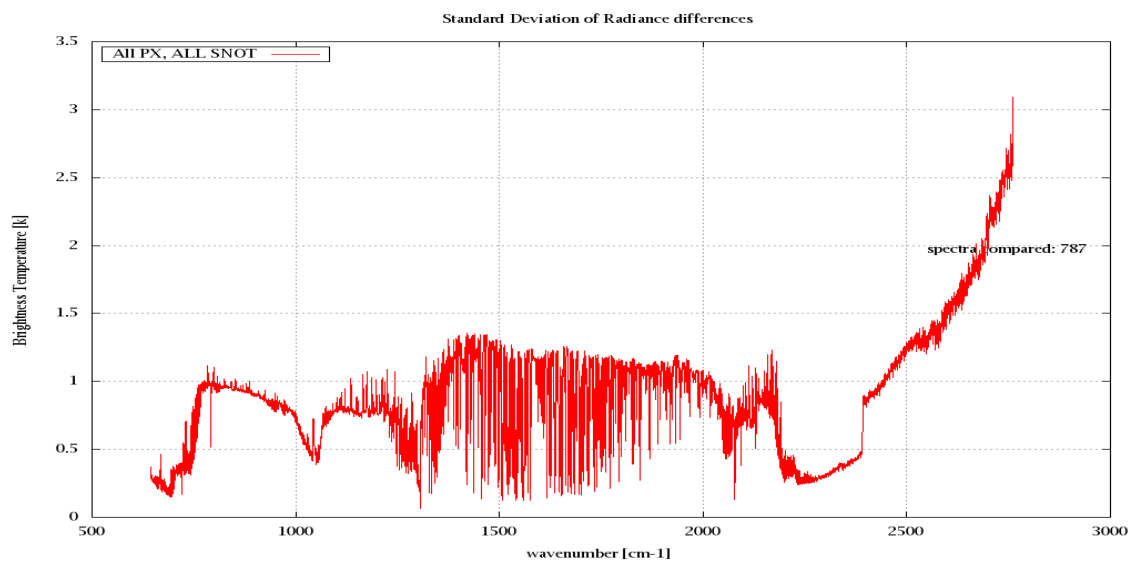


Figure 7: Standard Deviation of Radiance differences

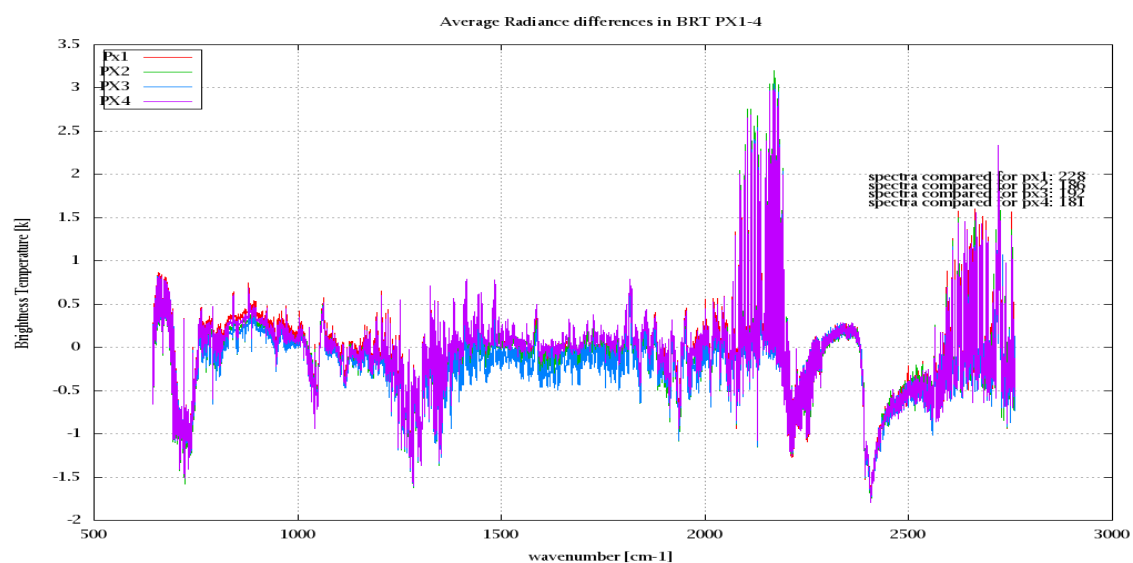


Figure 8: Average Radiance differences: OBS-CAL

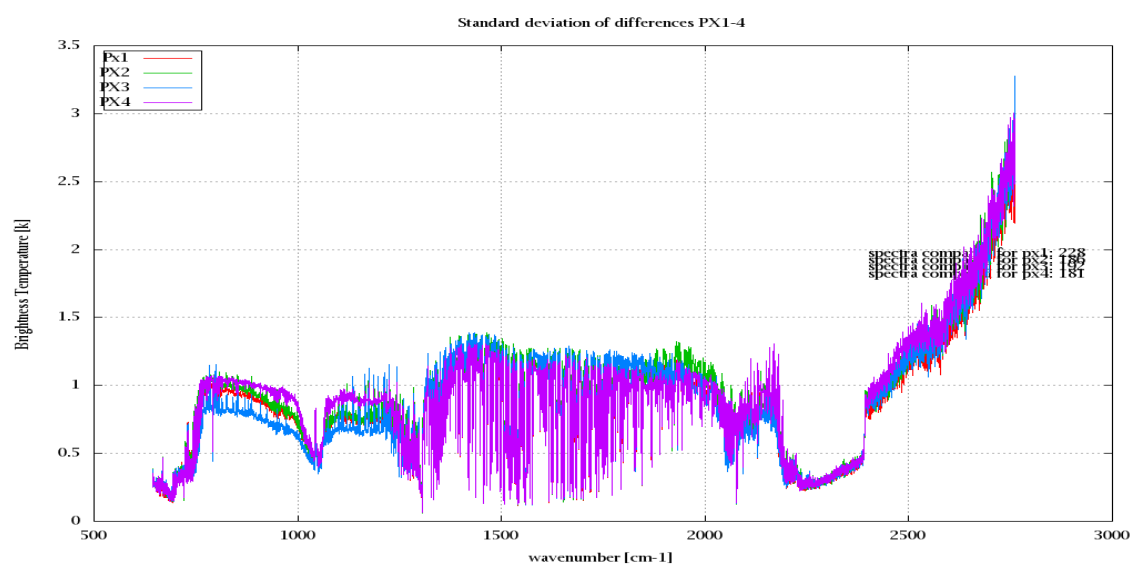


Figure 9: Standard Deviation of Radiance differences

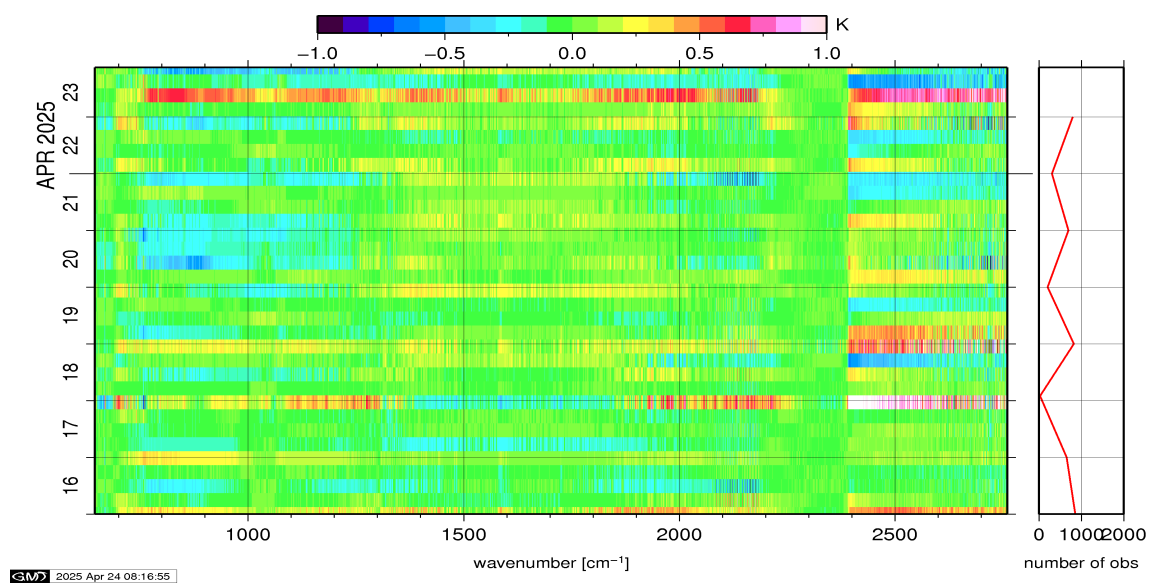


Figure 10: Radiance Anomaly in BT: All Channels

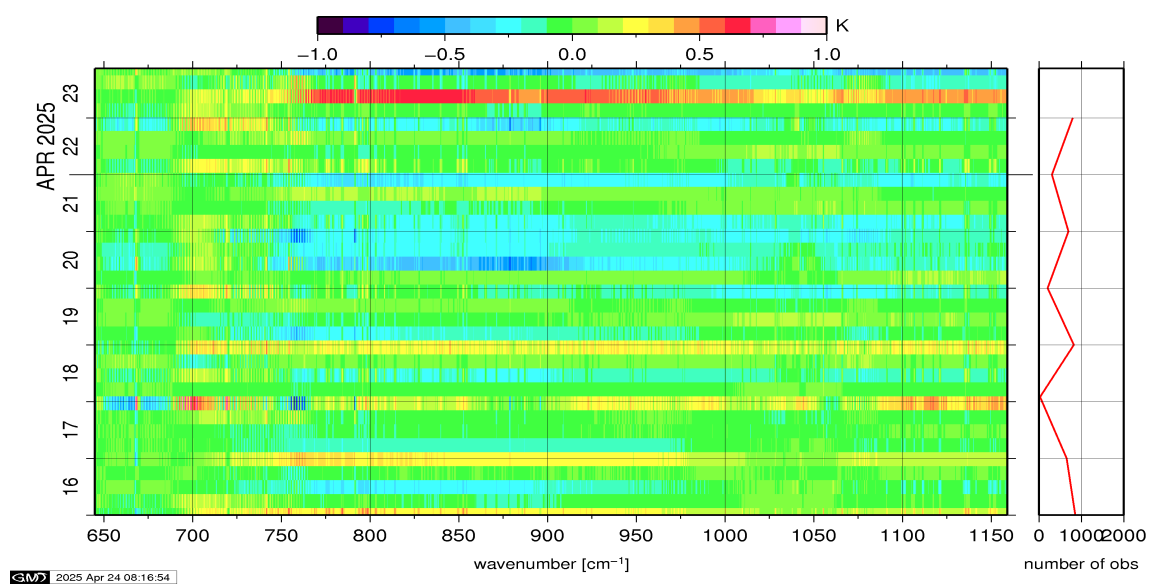


Figure 11: Radiance Anomaly in BT: IASI Band 1

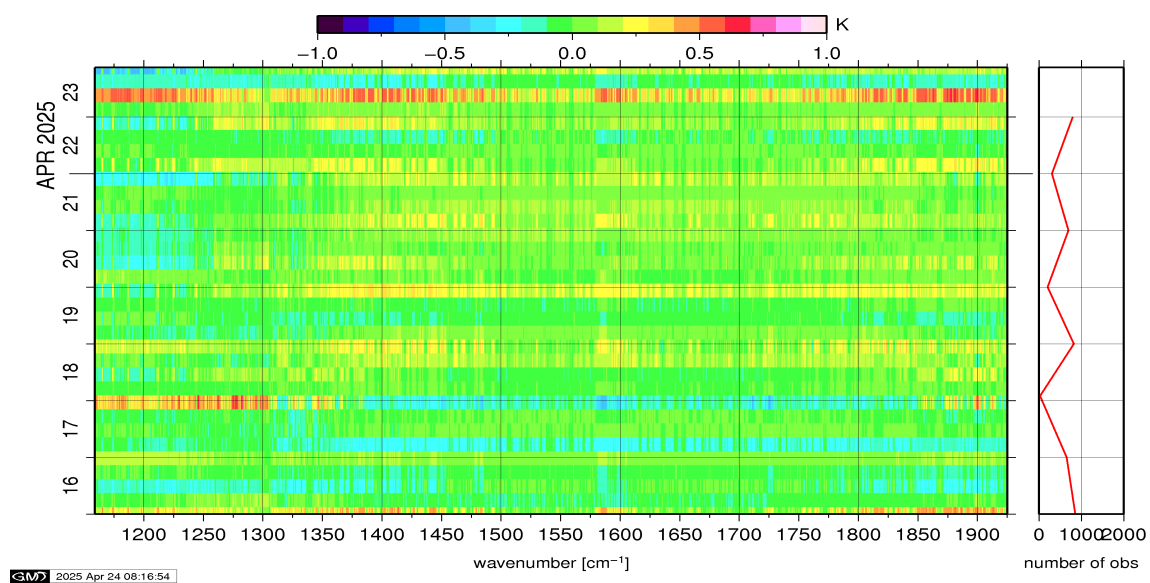


Figure 12: Radiance Anomaly in BT: IASI Band 2

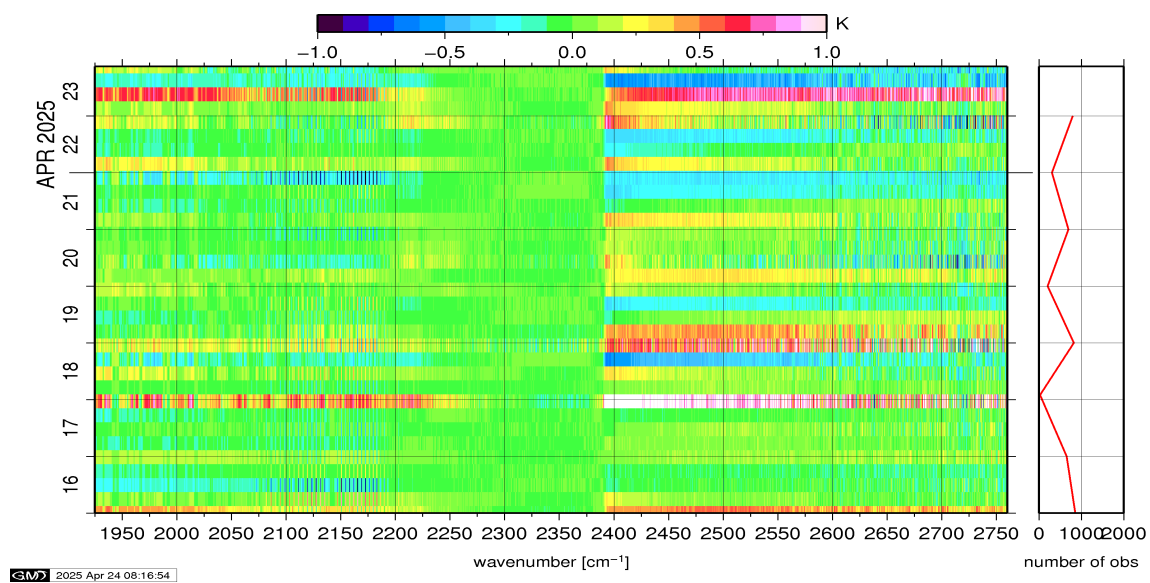


Figure 13: Radiance Anomaly in BT: IASI Band 3

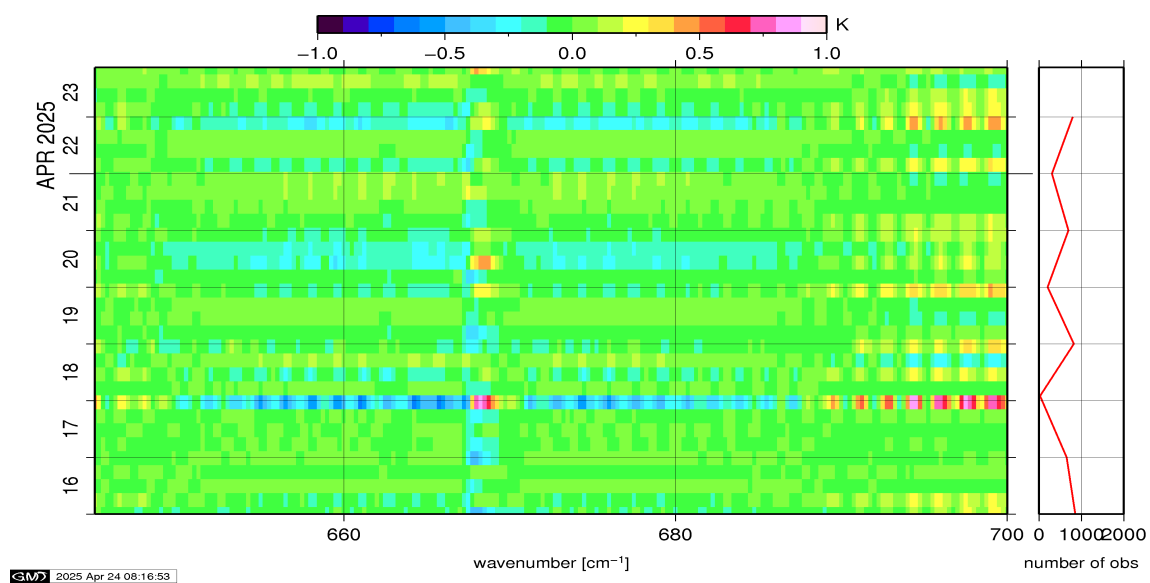


Figure 14: Radiance Anomaly in BT: CO2 14

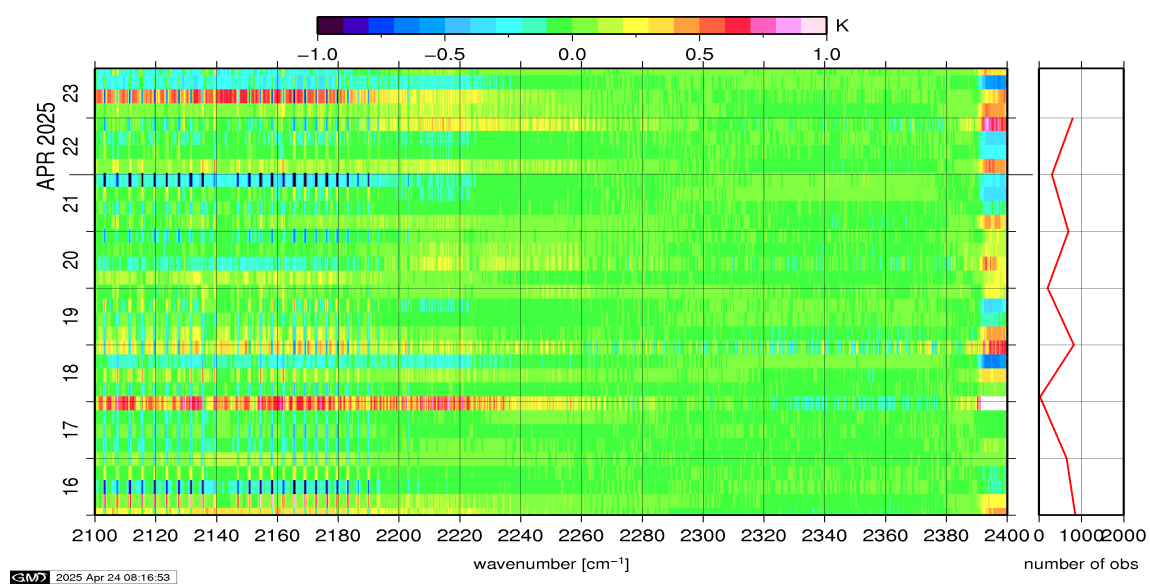


Figure 15: Radiance Anomaly in BT: CO2 4.3

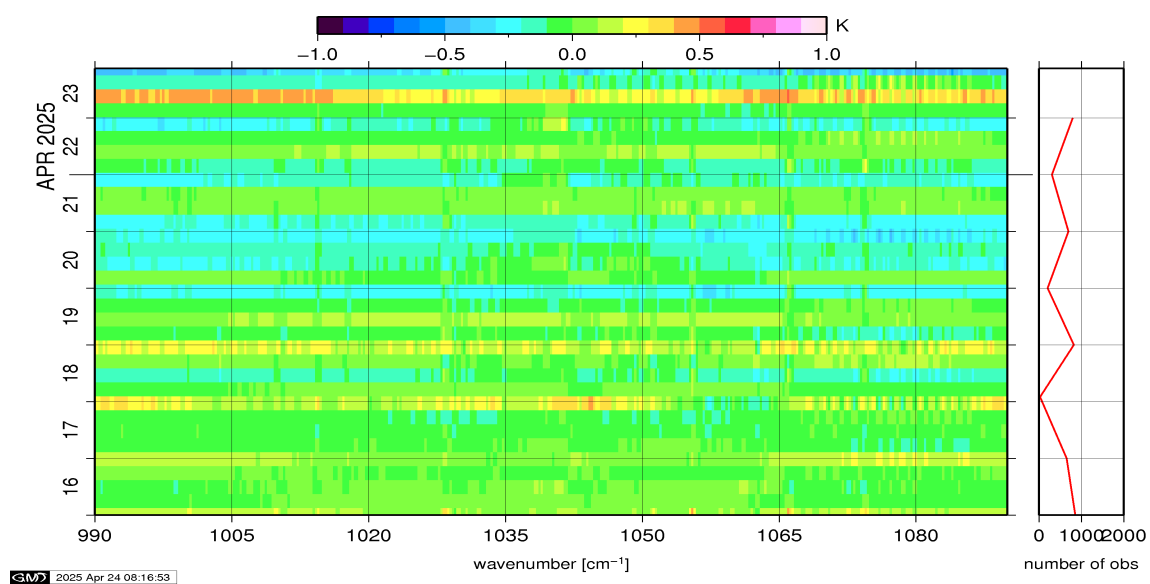


Figure 16: Radiance Anomaly in BT: O3