

### 1. Overview

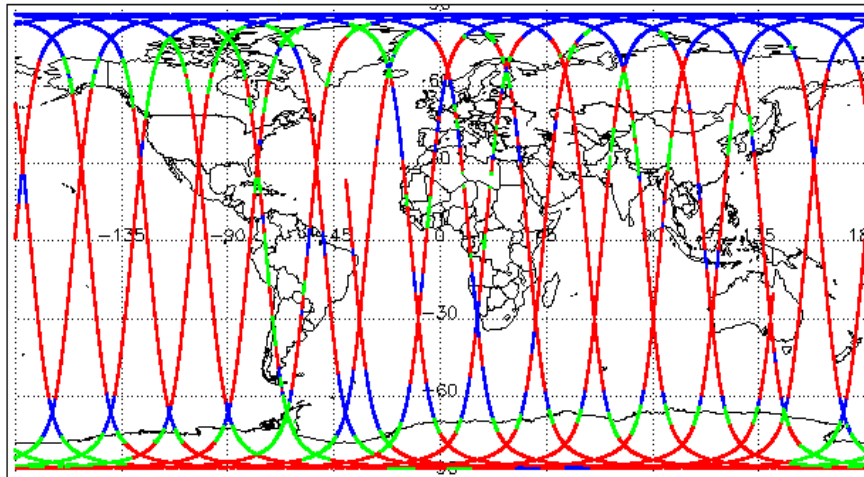
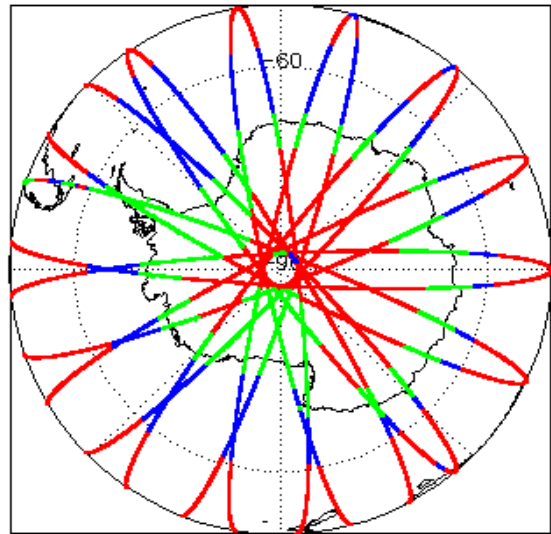
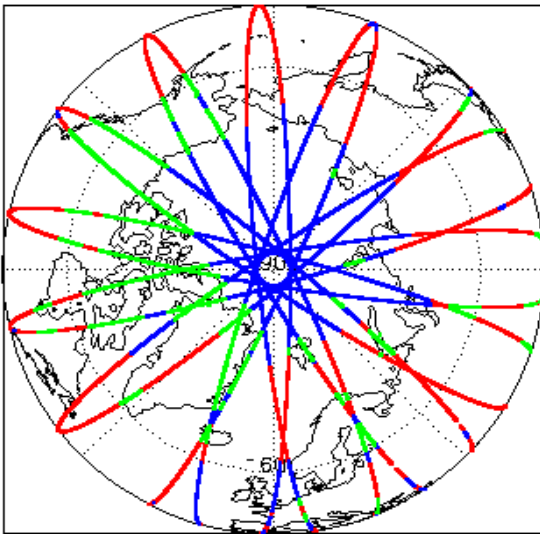
Report Production Date:	05-Oct-2022
Processor Used:	CryoSat Ice Processor
Data Used:	L1B and L2 OFFLINE Data

Check	Status
Server check: science-pds.cryosat.esa.int	Nominal
Server check: calval-pds.cryosat.esa.int	Nominal
Product Software Check	Nominal
Product Format Check	Nominal
Product Header Analysis	Nominal
Star Tracker Usage Check	Nominal
L1B Tracking Flag Check	See Section 4.4
L1B Calibration Usage Check	Nominal
L1B & L2 Auxiliary Data File Usage Check	Nominal
L1B & L2 Auxiliary Correction Error Check	See Section 5.4
L1B & L2 Measurement Confidence Data Check	See Section 4.8 and 5.5
QCC Errors/ Warnings	See Section 6.1, 6.2 and 6.3

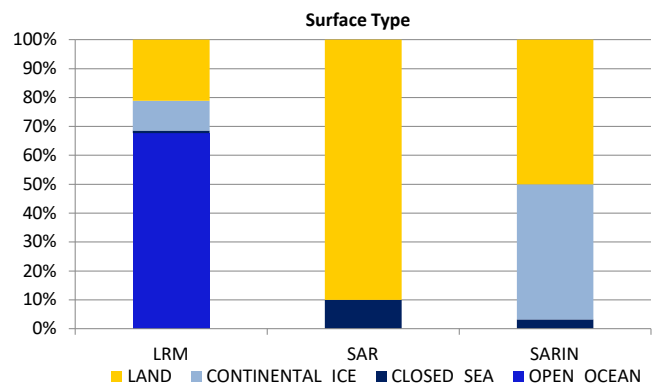
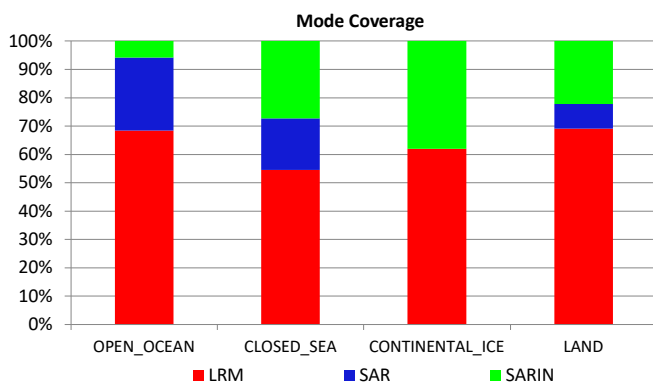
#### Mission / Instrument News

01-Sep-2022	None
02-Sep-2022	None
03-Sep-2022	Nothing planned

### 2. Global Coverage



Mode Coverage (%)		
	LRM	67.7
	SAR	19.2
	SARIn	13.1



### 3. Instrument Configuration

The SIRAL instrument configuration for the day of acquisition is provided below.

SIRAL instrument(s) in use:	SIRAL - A
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### 4. Level 1B Data Quality Check

#### 4.1 L1B Product Format Check

Each product, retrieved and unpacked from the science server, is checked to ensure it consists of both an XML header file (.HDR) and a product file (.DBL).

Number of products with errors: 0

#### 4.2 L1B Product Header Analysis

For all products, a series of pre-defined checks are carried out on the MPH and SPH in order to identify any inconsistencies and/or errors raised by the ground-segment processing chain.

Number of products with errors: 0

#### 4.3 Star Tracker Usage Check

Each product is checked in order to ensure a valid star tracker file has been used in processing.

Number of products with errors: 0

#### 4.4 L1B Tracking Flags Check

CryoSat L1B data includes a tracking flag for each measurement record. The bit value of this flag indicates any problems when set.

**Loss of Echo Flag:** This flag is currently set for some products over land, but this is to be expected.

Number of products with errors: 91

Product	Test Failed	Description
CS_OFFL_SIR_LRM_1B_20220901T235836_20220902T001045_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T002910_20220902T004207_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T004421_20220902T010202_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T011402_20220902T012017_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T012343_20220902T013410_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T013549_20220902T014940_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T020914_20220902T021143_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T021442_20220902T021443_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T021447_20220902T021449_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T021453_20220902T021809_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T022330_20220902T022346_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T022349_20220902T022447_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T022527_20220902T022800_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T022923_20220902T023317_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T023319_20220902T023633_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T025232_20220902T025852_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T025854_20220902T030029_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T030031_20220902T030123_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T030444_20220902T030809_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T034439_20220902T041359_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T041402_20220902T041408_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T041410_20220902T041755_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T041917_20220902T042001_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T043501_20220902T043938_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T044350_20220902T050737_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T051621_20220902T051946_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T061122_20220902T061635_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T061708_20220902T061800_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T061848_20220902T061929_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T061931_20220902T061959_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T062002_20220902T062006_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T062008_20220902T062127_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T062131_20220902T064036_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T065048_20220902T065854_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T075047_20220902T075138_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T075413_20220902T075748_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T075806_20220902T075836_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T080425_20220902T080921_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T081052_20220902T081612_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T081614_20220902T081621_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T081625_20220902T081635_E001	Loss of echo	The tracking echo is missing for one or more records

CS_OFFL_SIR_LRM_1B_20220902T090639_20220902T091812_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T093550_20220902T093638_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T093729_20220902T093903_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T093941_20220902T094434_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T102210_20220902T104759_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T104939_20220902T105825_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T120621_20220902T121714_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T121717_20220902T122752_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T123135_20220902T123735_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T125112_20220902T130634_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T130910_20220902T131210_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T133039_20220902T133309_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T134048_20220902T135443_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T135623_20220902T140200_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T140331_20220902T140641_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T140644_20220902T141048_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T141050_20220902T141109_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T141111_20220902T141115_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T141117_20220902T141134_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T141205_20220902T141757_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T142945_20220902T143151_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T143313_20220902T143619_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T143635_20220902T144024_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T144147_20220902T150424_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T152029_20220902T154313_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T154925_20220902T155258_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T161024_20220902T164404_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T170001_20220902T172606_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T172608_20220902T172620_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T172623_20220902T173145_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T173145_20220902T173544_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T183906_20220902T185554_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T185559_20220902T190251_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T190300_20220902T190342_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T190520_20220902T190631_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T190809_20220902T190910_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T191004_20220902T191129_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T191336_20220902T191421_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T203102_20220902T203245_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T203303_20220902T204007_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T204151_20220902T204433_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T204721_20220902T204822_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T210431_20220902T211706_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T211952_20220902T214057_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T221013_20220902T221730_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T221826_20220902T222232_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T224454_20220902T225323_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T225414_20220902T232000_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T232823_20220902T233057_E001	Loss of echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_LRM_1B_20220902T233905_20220902T235134_E001	Loss of echo	The tracking echo is missing for one or more records

#### 4.5 L1B Calibration Usage Check

Each product is checked in order to ensure that the necessary calibration files have been used in processing.

Number of products with errors: 0

#### 4.6 L1B Auxiliary Data File Usage Check

Each product is checked for missing Data Set Descriptors with respect to a pre-determined baseline and also to check the validity of Auxiliary Data Files is correct.

Number of products with errors: 0

#### 4.7 L1B Auxiliary Correction Error Check

CryoSat L1B data includes a correction error flag for each measurement record. The bit value of this flag indicates any problems when set.

Number of products with errors: 0

#### 4.8 L1B Measurement Confidence Data Check

CryoSat L1B data includes a measurement confidence flag for each measurement record. The bit value of this flag indicates any problems when set.

Currently, there are several common error flags raised in the Level 1B products which are expected due to operational mode or surface type. All common flags are summarised in the list below, followed by a table of any additional issues arising from this test.

**Block Degraded Flag:** This flag is currently set for a number of individual records generally at the start or end of products (all modes), but this is to be expected.

**Phase Perturbation Applied Flag:** This flag is currently set for all L1B SARIn products, indicating that the ADC correction application is deactivated, but this is in line with the current configuration.

Number of products with errors: 0

## 5. Level 2 Data Quality Check

### 5.1 L2 Product Format Check

Each product, retrieved and unpacked from the science server, is checked to ensure it consists of both an XML header file (.HDR) and a product file (.DBL).

Number of products with errors: 0

### 5.2 L2 Product Header Analysis

For all products, a series of pre-defined checks are carried out on the MPH and SPH in order to identify any inconsistencies and/or errors raised by the ground-segment processing chain.

Number of products with errors: 0

### 5.3 L2 Auxiliary Data File Usage Check

Each product is checked for missing Data Set Descriptors with respect to a pre-determined baseline and also to check the validity of Auxiliary Data Files is correct.

Number of products with errors: 0

### 5.4 L2 Auxiliary Correction Error Check

CryoSat L2 data includes a correction error flag for each measurement record. The bit value of this flag indicates any problems when set.

Currently, there are several common error flags raised in the Level 2 products which are expected due to operational mode or surface type. All common flags are summarised in the list below, followed by a table of any additional issues arising from this test.

**Sea State Bias error:** This flag is currently set in all L2 LRM products over ocean, indicating a problem with the sea state bias. Due to a known anomaly, the sea state bias field is currently unfilled in all Baseline-E L2 LRM products. This anomaly will be resolved in the next IPF update.

**Snow Depth Model error:** This flag is currently set in all L2 SAR products over ocean, which fall outside of the extent of the current snow depth model. Currently the snow depth model is only available over the high-latitude Arctic. There is no model currently provided for the Antarctic or marginal Arctic regions. An updated model will be provided in the next IPF update.

Number of products with errors: 101

Product	Test Failed	Description
CS_OFFL_SIR_SAR_2__20220902T001045_20220902T001132_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T001830_20220902T001836_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T001843_20220902T001849_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T002241_20220902T002910_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T004207_20220902T004421_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T010203_20220902T010421_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T013410_20220902T013549_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T014940_20220902T015051_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T015742_20220902T015748_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T020613_20220902T020630_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T020712_20220902T020724_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T020808_20220902T020914_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T022447_20220902T022526_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T030809_20220902T030811_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T031023_20220902T031041_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T032817_20220902T032956_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T034212_20220902T034439_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T050737_20220902T050934_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T052105_20220902T052329_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T061800_20220902T061847_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T064037_20220902T064237_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T064656_20220902T064924_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T070006_20220902T070412_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T073744_20220902T073833_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T075138_20220902T075208_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T075331_20220902T075413_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2__20220902T080039_20220902T080112_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model



CS_OFFL_SIR_SAR_2_20220902T204851_20220902T205130_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2_20220902T205551_20220902T210430_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2_20220902T211706_20220902T211952_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2_20220902T214057_20220902T214316_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2_20220902T214904_20220902T214911_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2_20220902T215441_20220902T215825_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2_20220902T220826_20220902T221013_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2_20220902T222232_20220902T222956_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2_20220902T223211_20220902T223246_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2_20220902T225323_20220902T225414_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2_20220902T232000_20220902T232114_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2_20220902T232803_20220902T232809_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2_20220902T232816_20220902T232822_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2_20220902T233244_20220902T233905_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SAR_2_20220902T235135_20220902T235157_E001	Snow depth model	There is an error with the Snow Depth value, where one or more records falls outside of the extent of the current snow depth model
CS_OFFL_SIR_SIN_2_20220902T002047_20220902T002241_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2_20220902T015921_20220902T020613_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2_20220902T083543_20220902T083849_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2_20220902T101444_20220902T101823_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2_20220902T114923_20220902T115157_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2_20220902T132501_20220902T133039_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2_20220902T182603_20220902T182955_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2_20220902T200548_20220902T200902_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records
CS_OFFL_SIR_SIN_2_20220902T214316_20220902T214737_E001	Mean Sea Surface model	There is an error with the Mean Sea Surface for one or more records

## 5.5 L2 Measurement Quality Flag Check

CryoSat L2 data includes a quality flag for each 20-Hz measurement record. The bit value of this flag indicates any problems when set.

**Currently, there are several common error flags raised in the Level 2 products which are expected due to operational mode or surface type. All common flags are summarised in the list below, followed by a table of any additional issues arising from this test.**

**Height and Backscatter errors:** These flags are currently set for products over land, but this is to be expected. Retracker 1 Height and Backscatter error flags are also set for products over sea-ice, but this is to be expected.

**SSHA interpolation error:** This flag is currently set for a number of SAR products occurring at surface type boundaries, but this is to be expected.

**Freeboard error:** This flag is correctly set in all L2 SAR products that are not discriminated as sea-ice, and for which freeboard cannot be calculated.

**Peakiness error:** This flag is currently set for products over sea-ice, but this is to be expected.

**SARIn X-Track Angle Error:** This flag is set when the difference between the computed surface elevation and the DEM is >50 m. The DEM is only available over Greenland and Antarctica and as a result this flag is set for L2 SARIn products in all other locations as expected.

**Number of products with errors:** 243

Product	Test Failed	Description
CS_OFFL_SIR_LRM_2_20220901T235836_20220902T001045_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_2_20220902T002910_20220902T004207_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_2_20220902T004421_20220902T010202_E001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_2_20220902T011402_20220902T012017_E001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_2_20220902T012343_20220902T013410_E001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_2_20220902T013549_20220902T014940_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2), Surface model unavailable	There is a height and backscatter error for Retracker 2 and no DEM or Slope Model was used for the location of one or more records
CS_OFFL_SIR_LRM_2_20220902T021453_20220902T021809_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_2_20220902T022527_20220902T022800_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_2_20220902T022923_20220902T023317_E001	Height Error (Retracker 2), Height Error (Retracker 3), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 and a height error for Retracker 3 for one or more records
CS_OFFL_SIR_LRM_2_20220902T023755_20220902T024006_E001	Height Error (Retracker 2), Backscatter Error (Retracker 2)	There is a height and backscatter error for Retracker 2 for one or more records
CS_OFFL_SIR_LRM_2_20220902T025232_20220902T025852_E001	Surface Model Unavailable	No DEM or Slope Model was used for the location of one or more records

















CS_OFFL_SIR_SIN_2_20220902T232114_20220902T232235_E001	Backscatter Error (Retracker 2), Backscatter Error (Retracker 3), SARIn X track Angle Error	There is a backscatter error for Retracker 2 and 3 and an ambiguous angle was detected for SARIn mode for one or more records
CS_OFFL_SIR_SIN_2_20220902T233057_20220902T233244_E001	Backscatter Error (Retracker 2), Backscatter Error (Retracker 3), SARIn X track Angle Error	There is a backscatter error for Retracker 2 and 3 and an ambiguous angle was detected for SARIn mode for one or more records

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