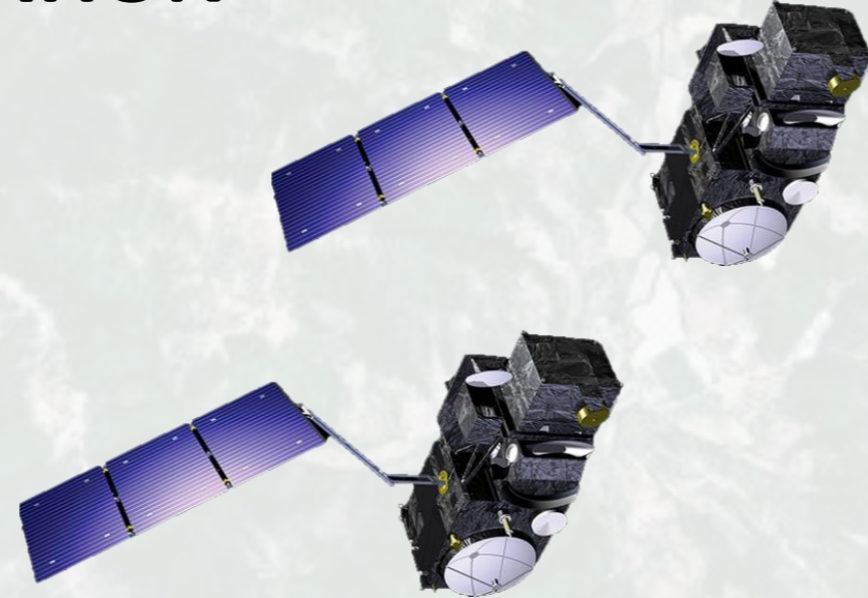


# NEW SENTINEL-3 INLAND WATER L2 THEMATIC PRODUCTS

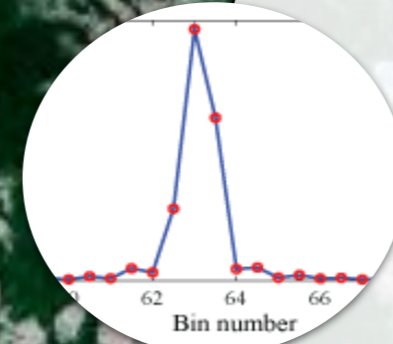
FULL MISSION REPROCESSING (FMR) WITH BASELINE COLLECTION 005 (BC005)

## MISSION INFORMATION

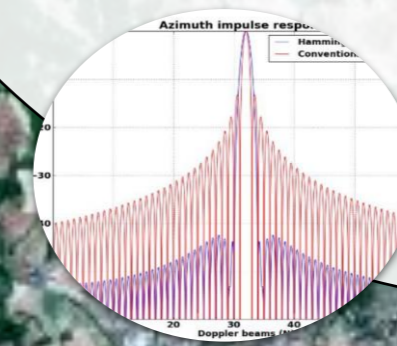
TWO SATELLITES MISSION S3A & S3B  
 SAR ALTIMETRY Ku & C BAND  
 ALTITUDE 815 km  
 INCLINATION 98.6 deg  
 GROUND TRACK DEVIATION 1km  
 REVISIT TIME 27 days  
 DATA SINCE 2016 (S3A) 2018 (S3B)



DEDICATED MASK FOR INLAND WATER AREAS



ZERO-PADDING PROCESSING TO IMPROVE WAVE SURFACE HEIGHT (WSH)

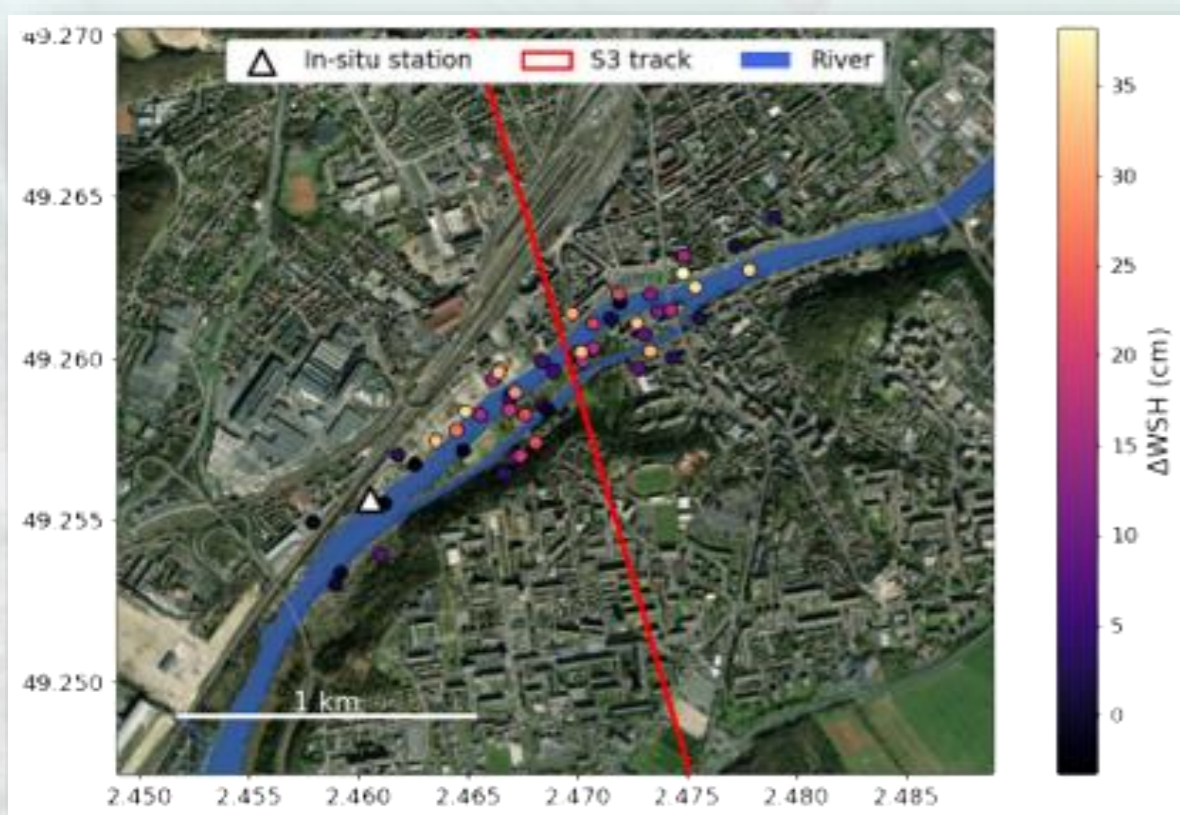


HAMMING WINDOW FILTER TO REDUCE WAVEFORM CONTAMINATION

WHAT'S NEW IN BC005

## BC005 VALIDATION RESULTS OVER RIVERS

### IDEAL SINGLE RIVER CASE

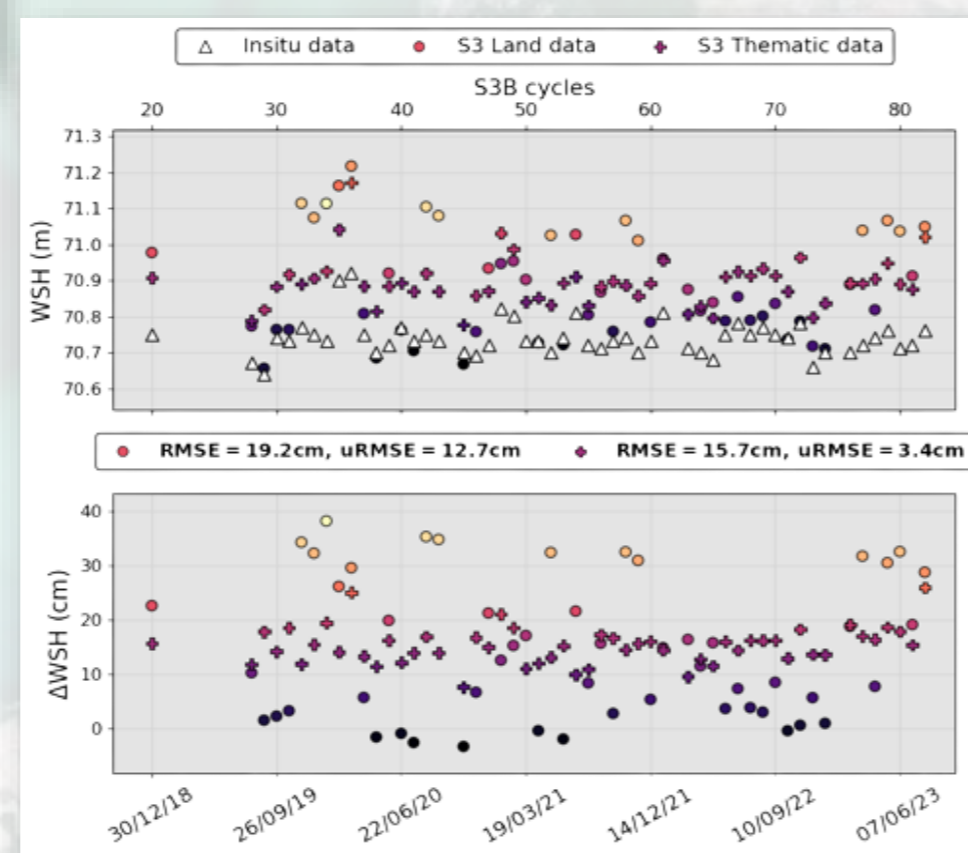


uRMSE OVER LOW SLOPE RIVERS REDUCED BY A FACTOR OF 4

uRMSE **4** times smaller

CASE SHOWN FOR OISE RIVER (FR)  
 STATISTICAL ANALYSIS BASED ON THIN RIVER WITH LOW SLOPE.

PERFORMANCES OVER IDEAL RIVERS ARE SIMILAR TO LAKES.



## BC005 RESULTS OVER LAKES



$\sigma = 19.54$  cm  
 OLD PRODUCTS

$\sigma = 5.84$  cm  
 NEW PRODUCTS

RETRACKING NOISE DISTRIBUTION

OFF-SET CENTER OF GRAVITY (OCOG) RETRACKING NOISE OVER LAKES REDUCED BY A FACTOR OF 4

RETRACKING NOISE

**4** times smaller

LAKES: 1 TO 5 km<sup>2</sup> @ LOW LAT.

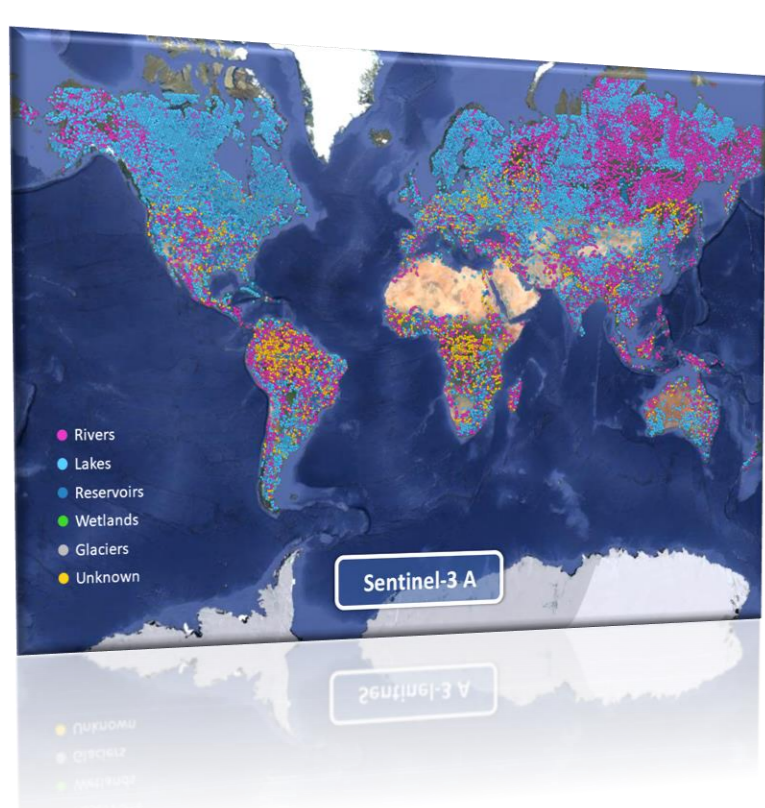
## BC005 IN-SITU COMPARISON



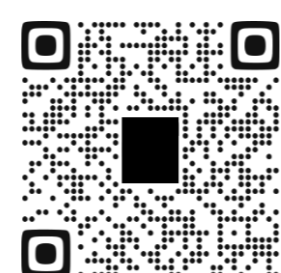
DISCREPANCIES WITH RESPECT TO IN-SITU DECREASED BY **3 cm**.  
 MEDIAN uRMSE

**23 cm**

STATISTICAL RESULT BASED ON COMPARISON WITH 22 IN-SITU SCHAPI STATIONS INCLUDING 2 COMPLEX RIVERS

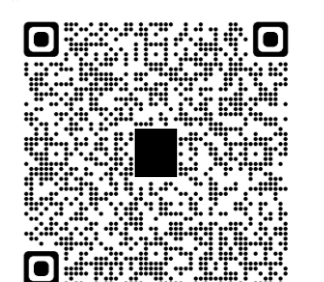


NADIR ACQUISITION FOR HYDROLOGICAL TARGETS  
 OPEN LOOP TRACKING MODE USED ON-BOARD  
 MORE THAN 65K TARGETS  
 97% PERFORMANCE OF WAVEFORM ACQUISITION  
 IMPROVE/DEFINE YOUR OWN TARGET @

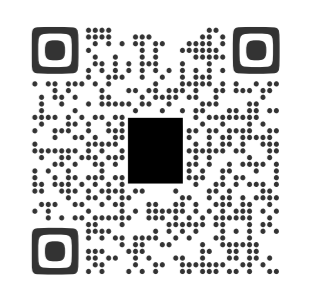


Filomena.Catapano@ext.esa.int  
 Filomena Catapano, Pierre Féménias, Jérôme Bouffard (ESA ESRIN) and S3 MPC ALT team

S3 THEMATIC PRODUCTS DATA USER HANDBOOK



FREE AND OPEN DATA ACCESS



FULL MISSION REPROCESSING NEWS

