



isardSAT

REAPER
Calibration
Monitoring

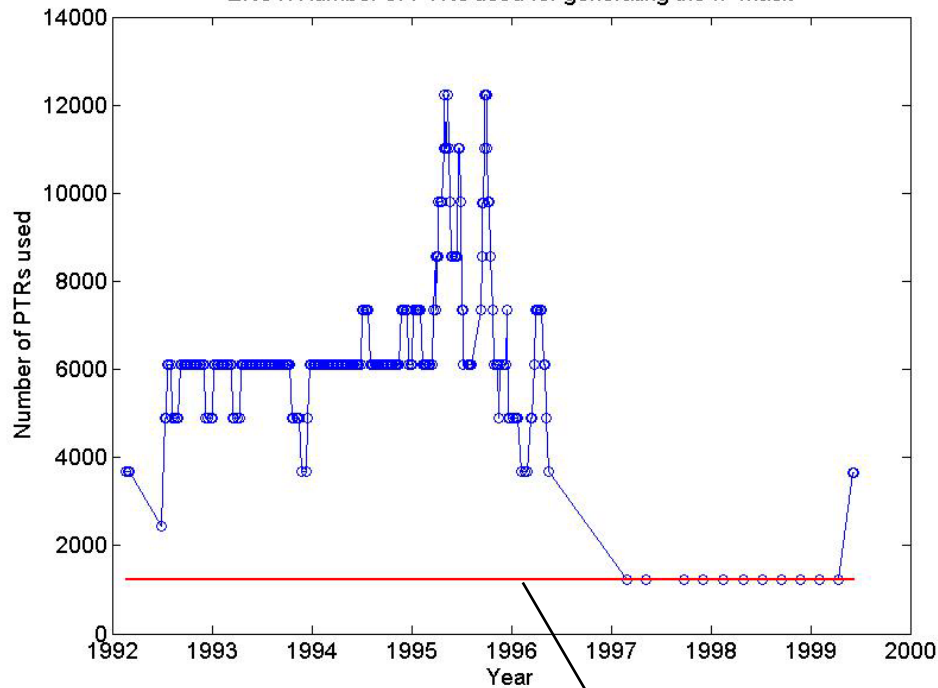
Quality Assessment
Results

- **QUALITY ASSESSMENT OF TWO MAIN CALIBRATION CHAINS:**
 - REAPER ERS1 & ERS2 IF-mask Quality Assessment
 - REAPER ERS1 & ERS2 PTR Quality Assessment

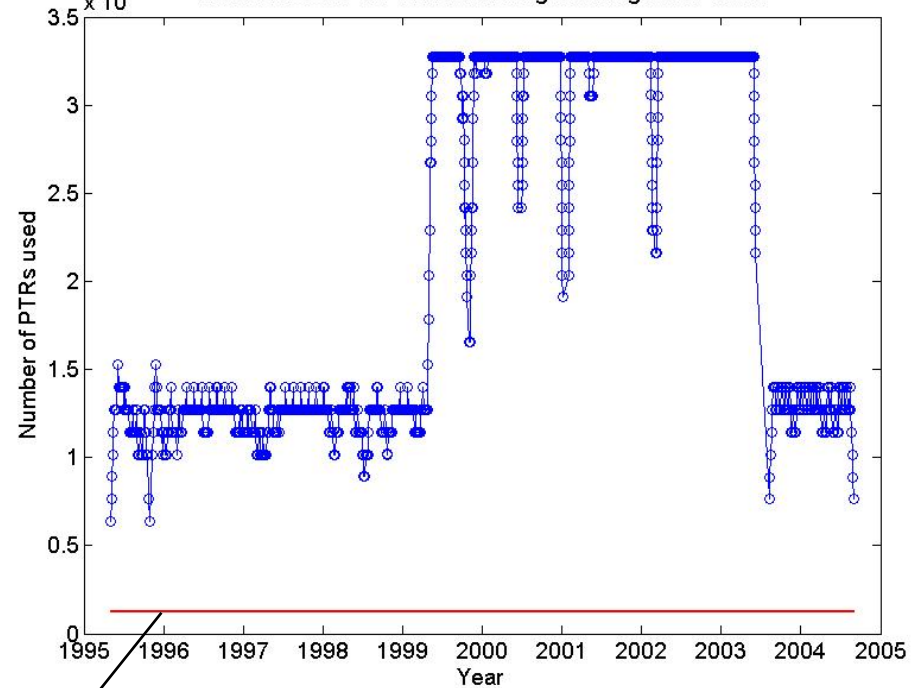
- **REAPER IF-mask Quality Assessment:**
 - Total number of IF masks analyzed:
 - ERS1: 265
 - ERS2: 1978
 - Period: Whole mission
 - Parameters monitored:
 - Number of PTRs used for IF-mask reconstruction
 - Time gaps between IF-masks
 - IF mask slope
 - De-sloped IF mask standard deviation
 - Sample by sample variation

- REAPER IF-mask Quality Assessment: Number of PTRs
 - Number of PTRs used for IF-mask reconstruction

ERS1: Number of PTRs used for generating the IF mask

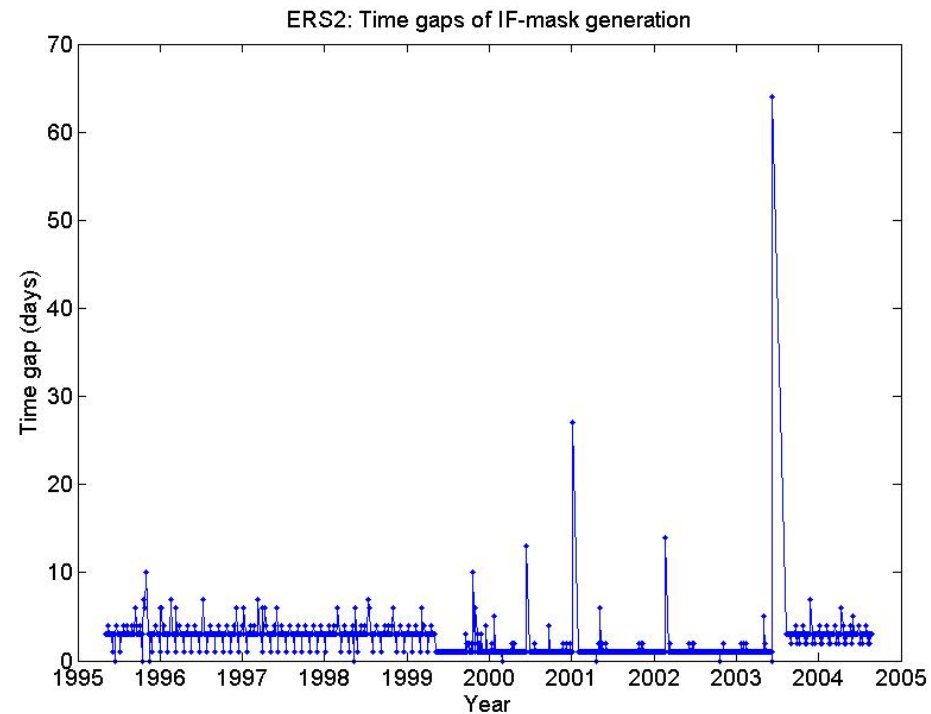
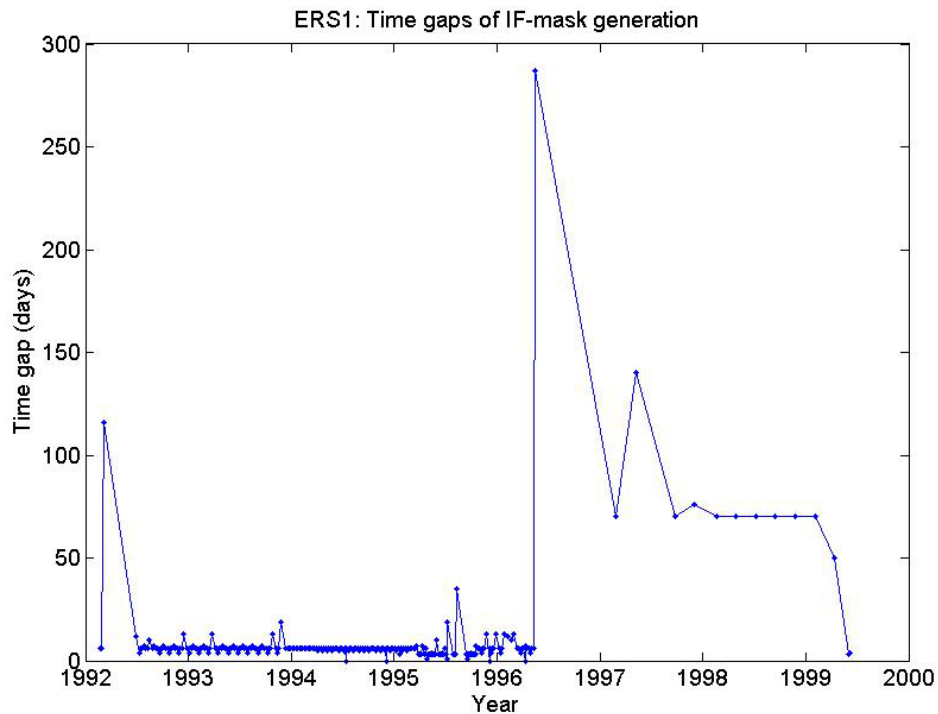


ERS2: Number of PTRs used for generating the IF mask



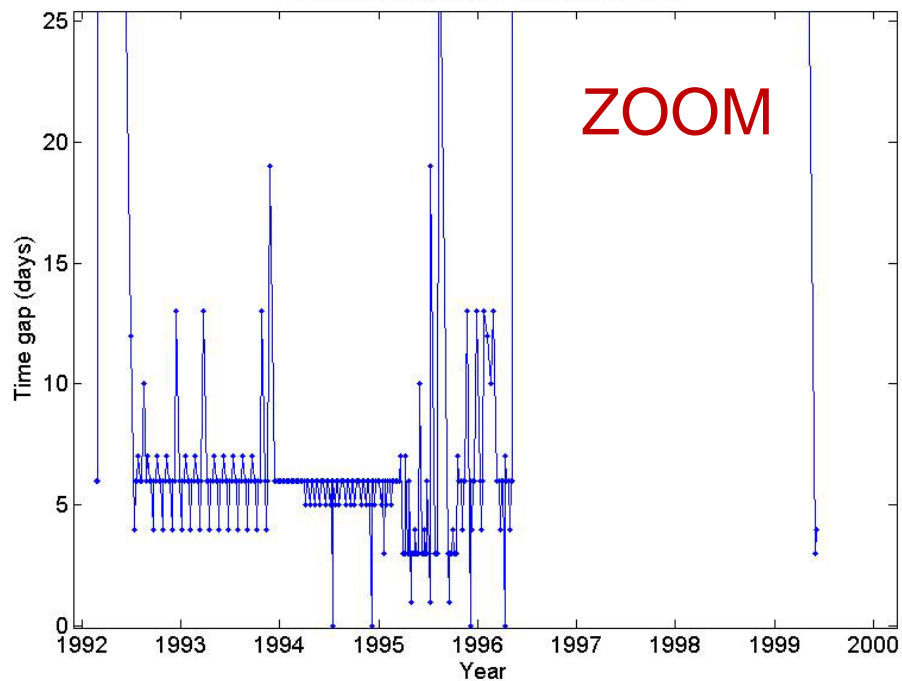
Minimum Number of PTRs for building an IF-mask

- REAPER IF-mask Quality Assessment: Time gaps
 - Time gaps between IF-masks

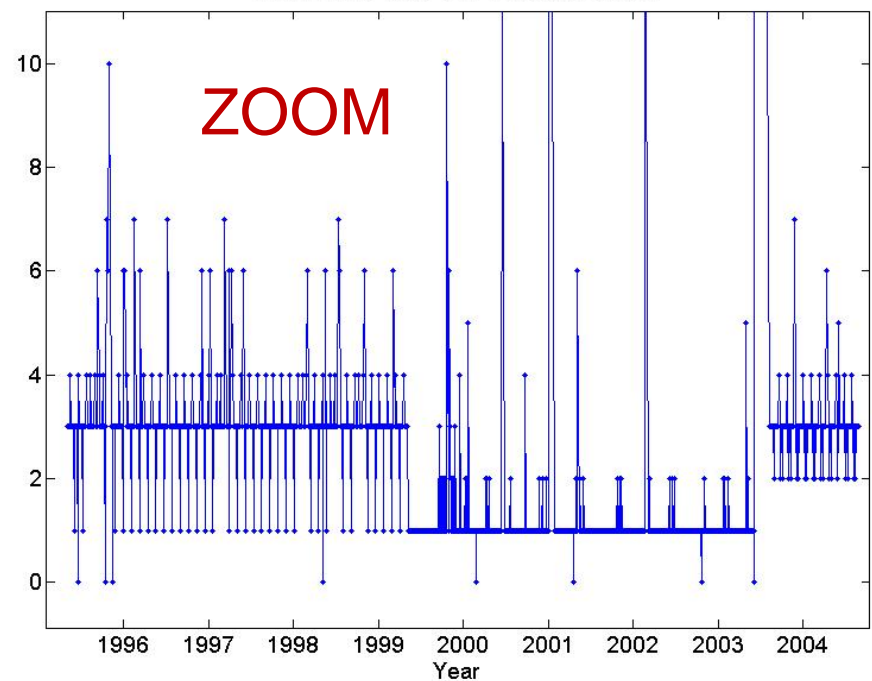


- REAPER IF-mask Quality Assessment: Time gaps
 - Time gaps between IF-masks

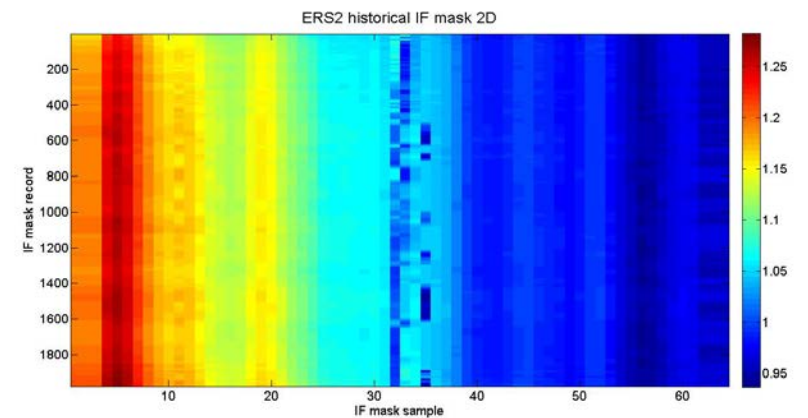
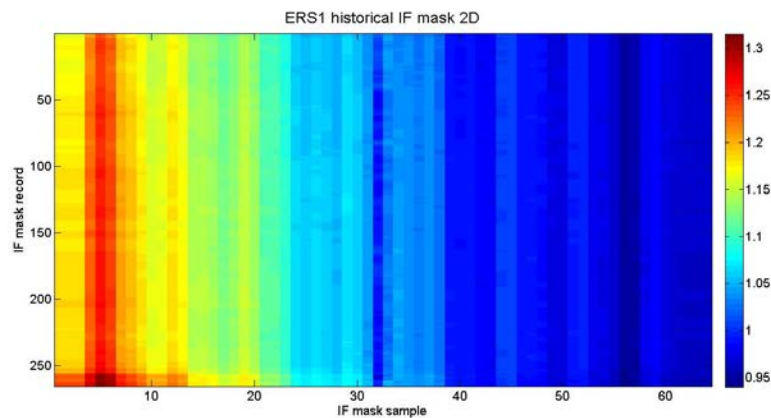
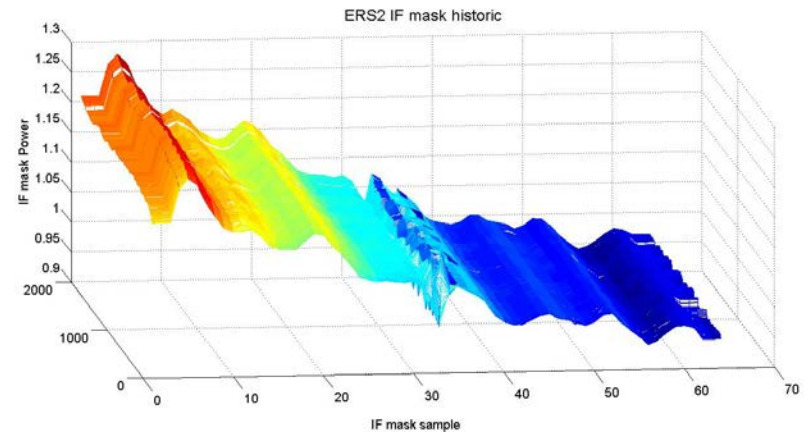
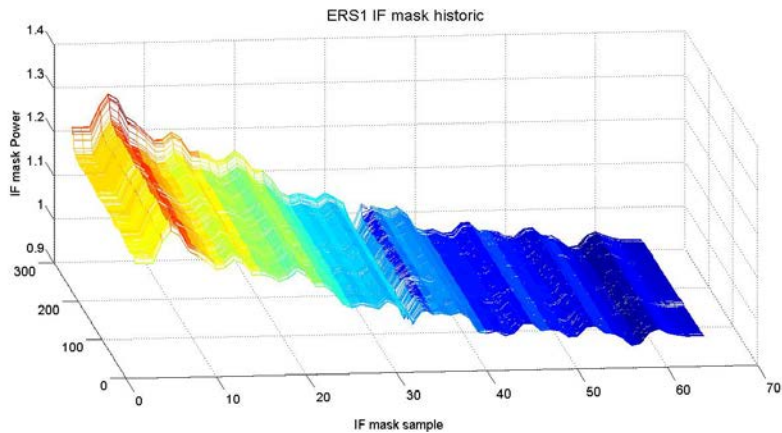
ERS1: Time gaps of IF-mask generation



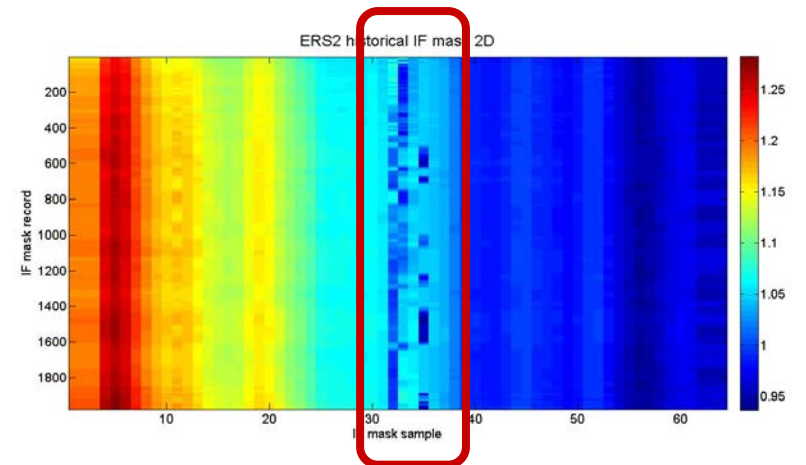
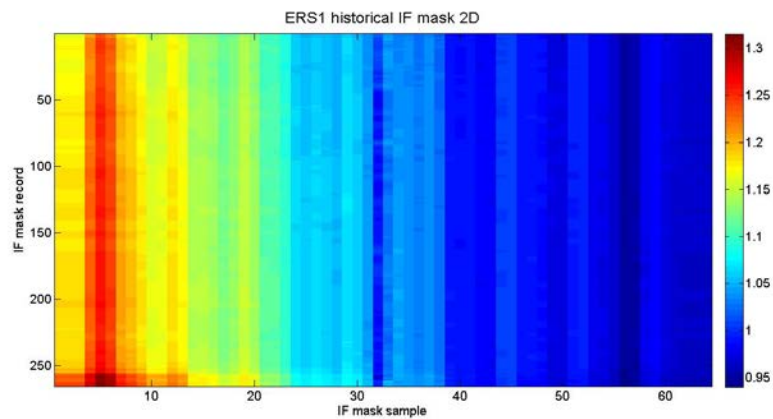
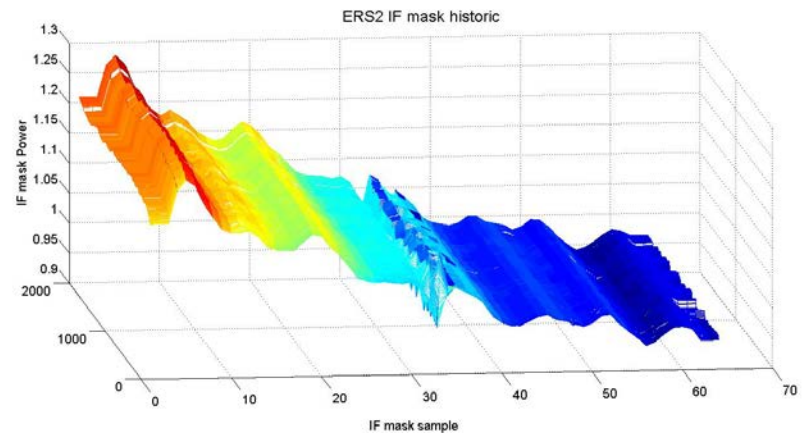
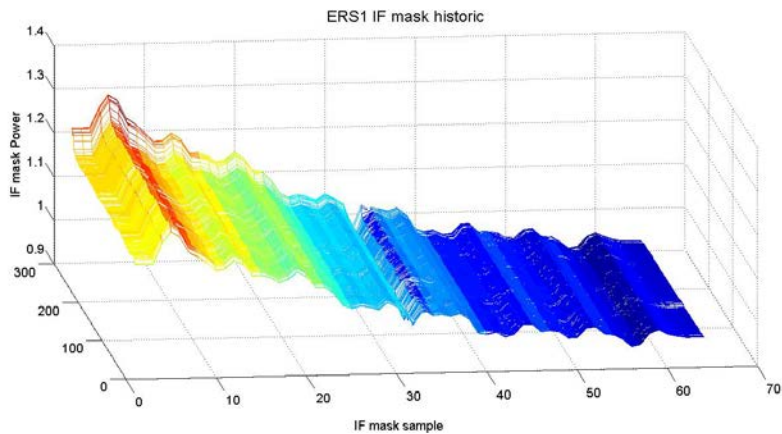
ERS2: Time gaps of IF-mask generation



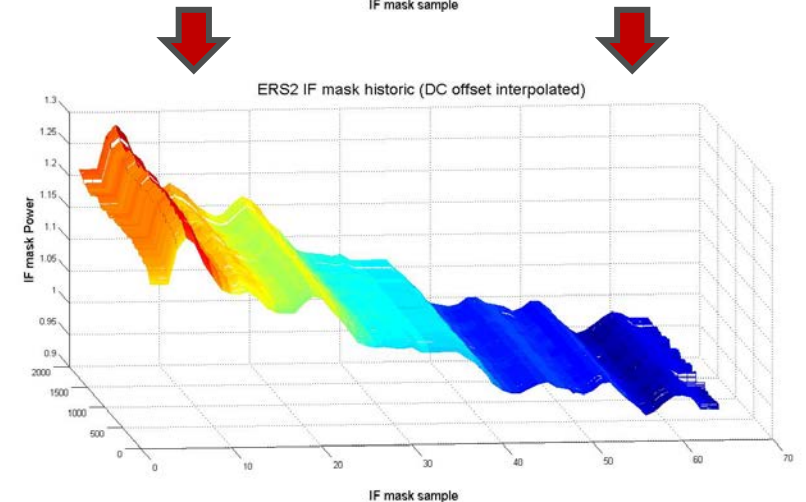
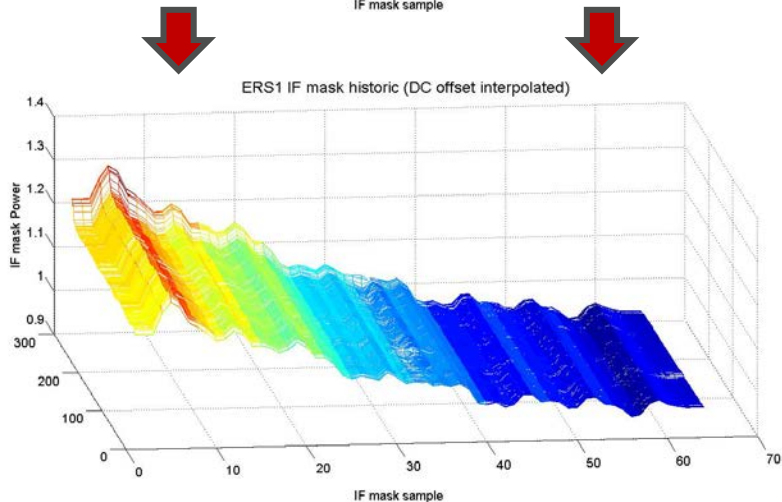
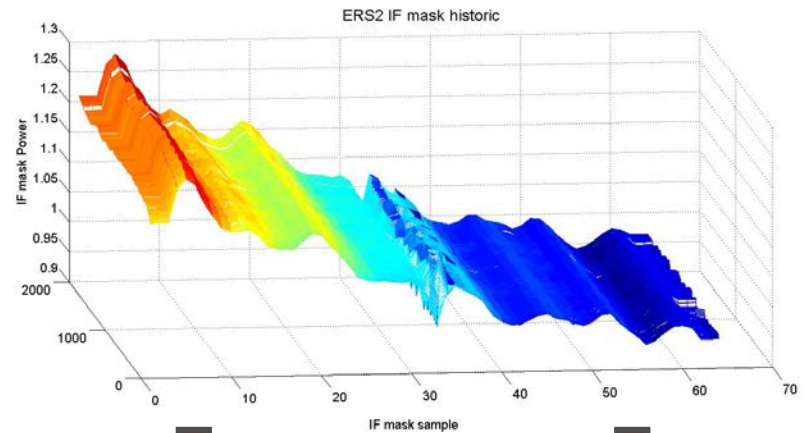
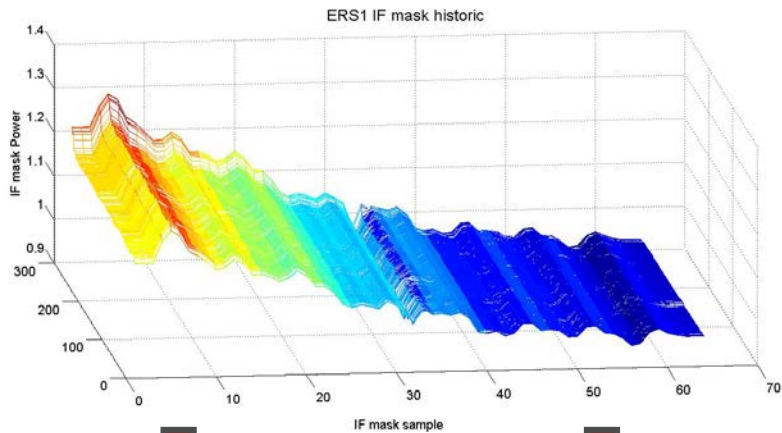
- REAPER IF-mask Quality Assessment: General IF Shape



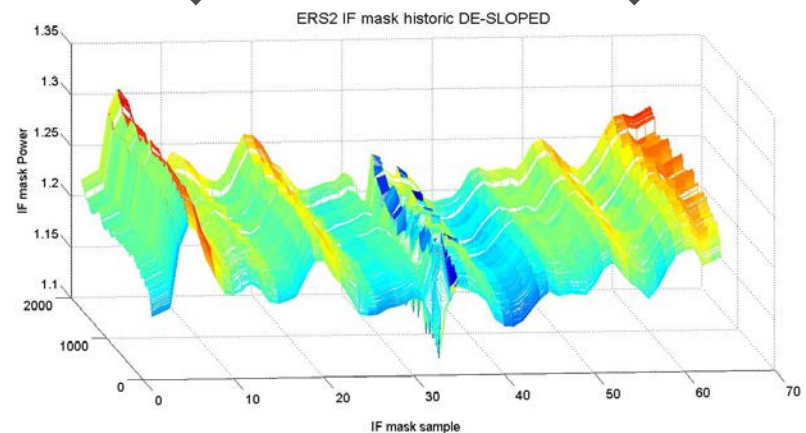
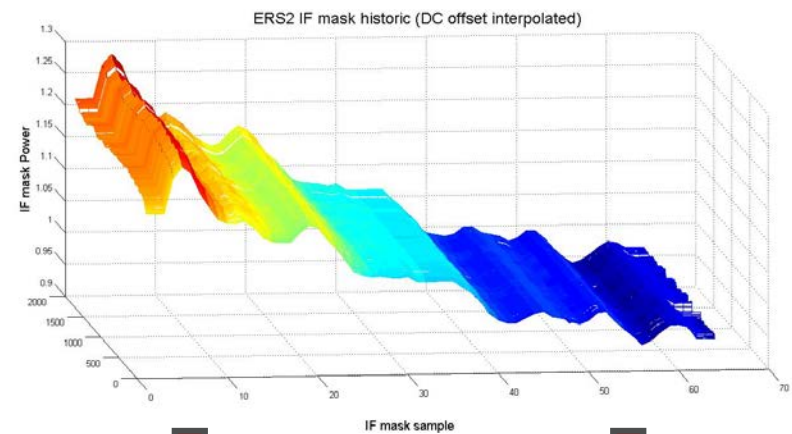
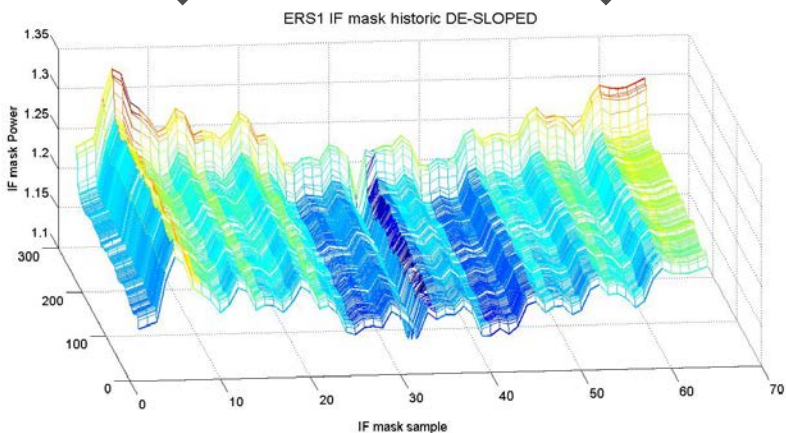
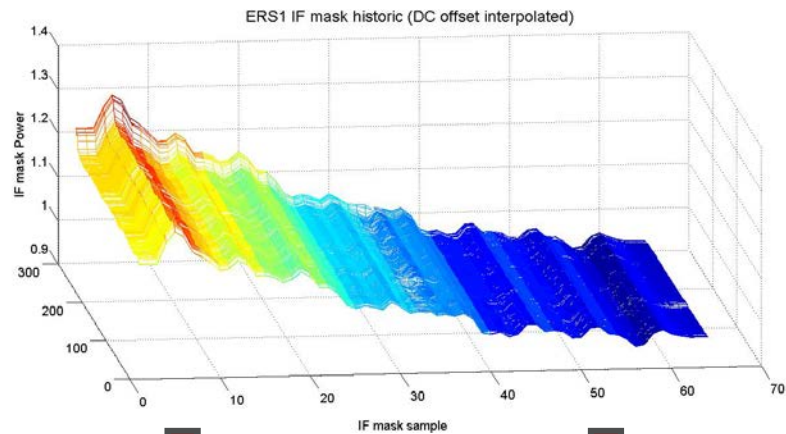
- REAPER IF-mask Quality Assessment: General IF Shape



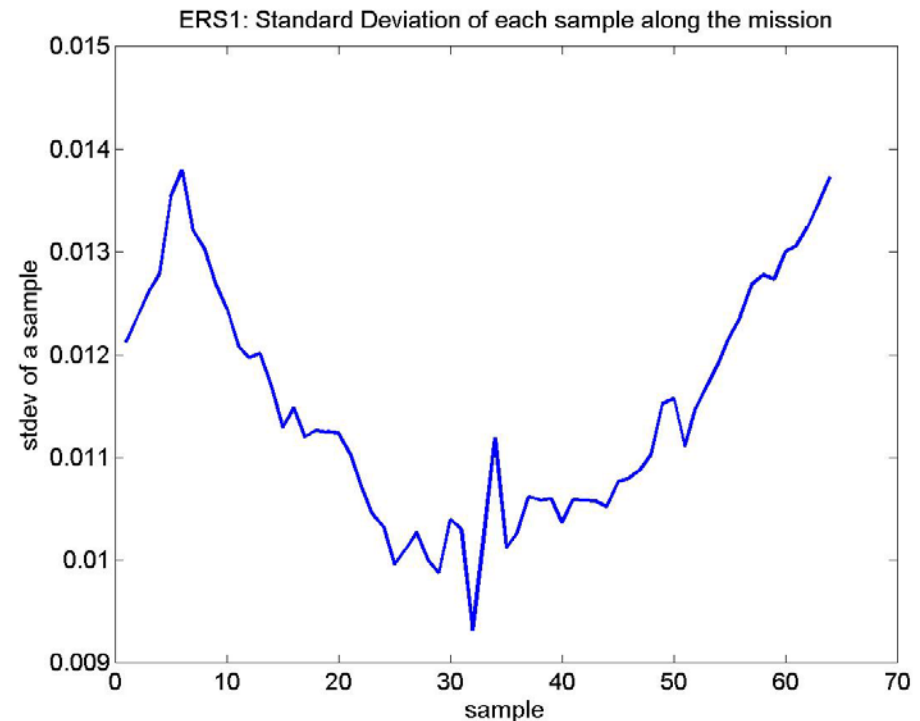
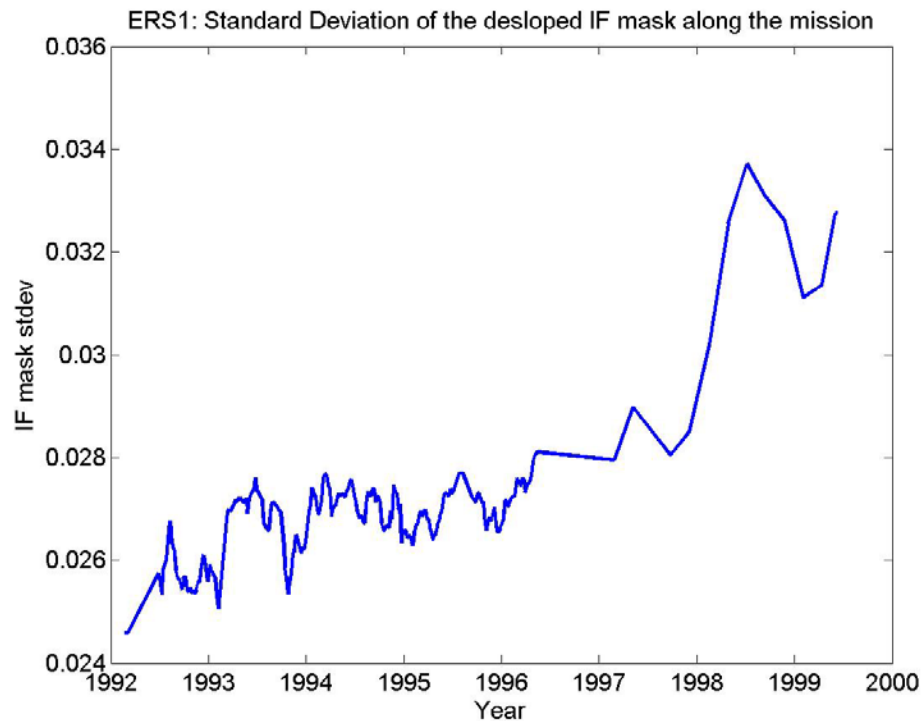
- REAPER IF-mask Quality Assessment: De-sloped IF-mask for stdev
 - First interpolate DC-offset range bins



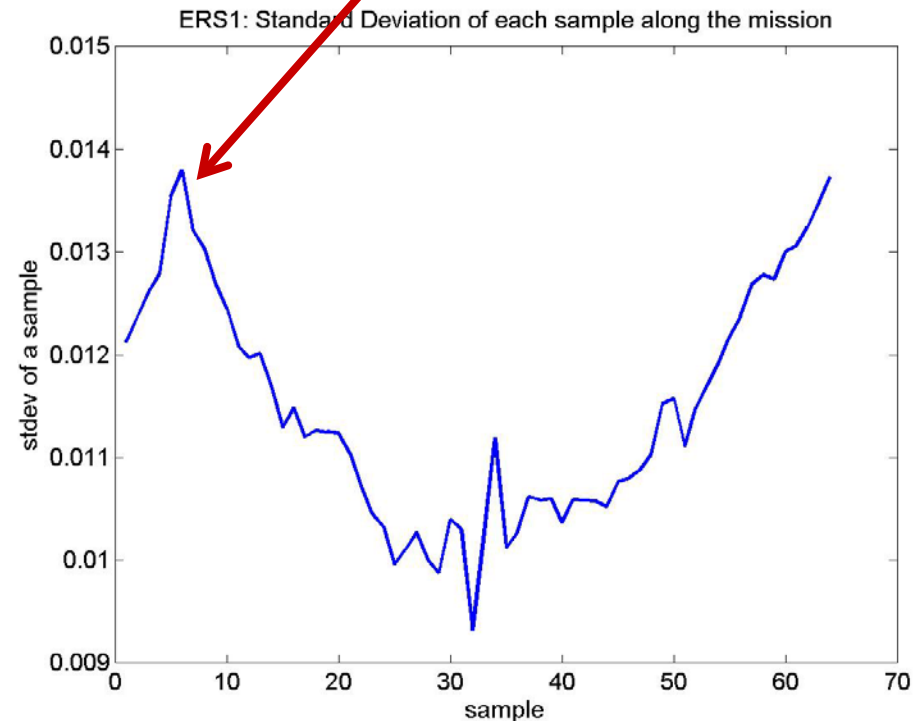
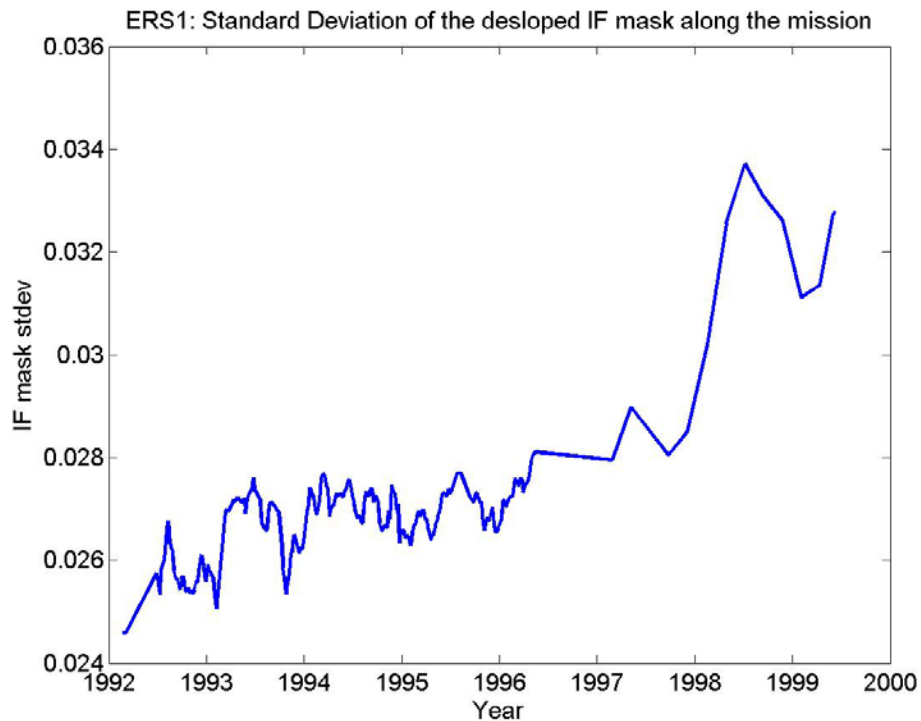
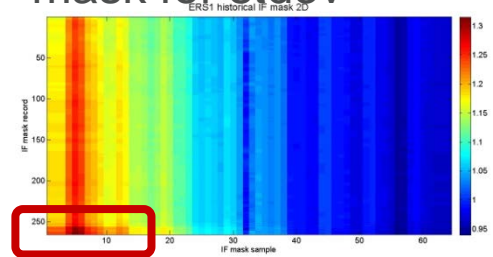
- REAPER IF-mask Quality Assessment: De-sloped IF-mask for stdev
 - Second: linear regression and de-slope



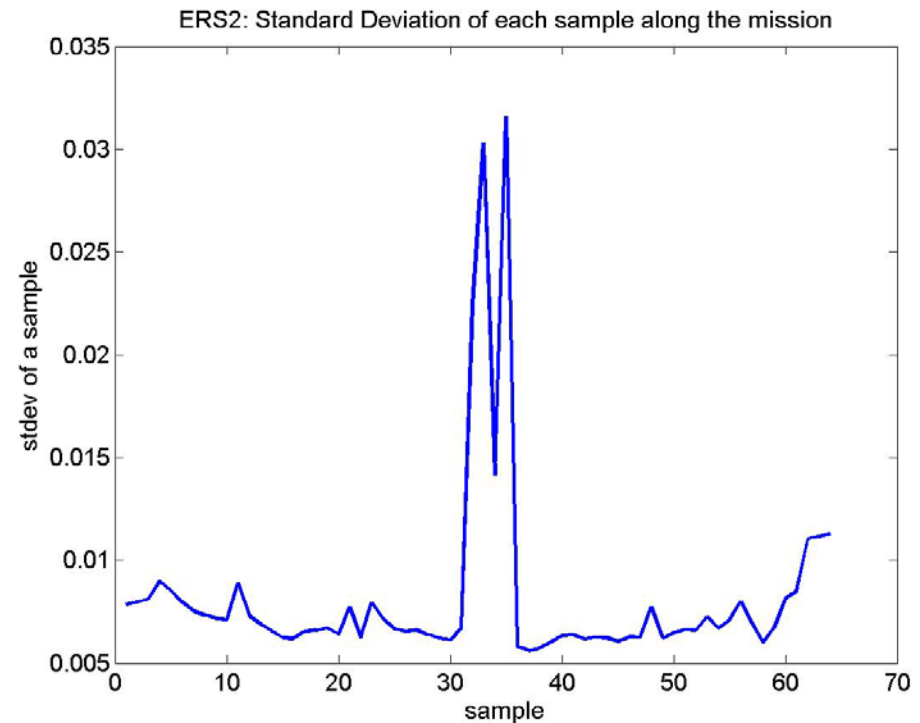
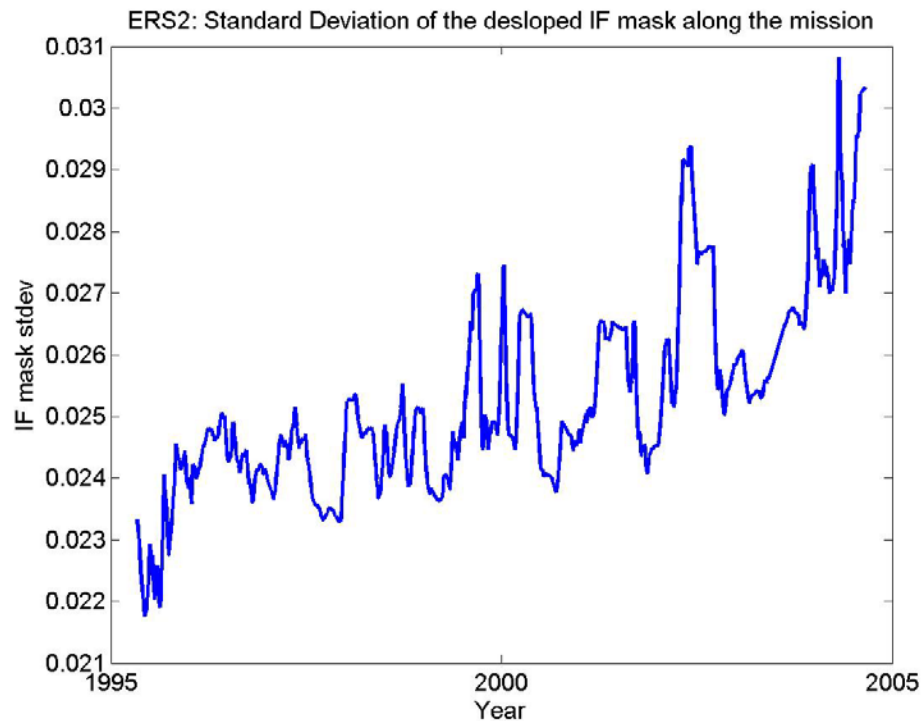
- REAPER IF-mask Quality Assessment: De-sloped IF-mask for stdev
 - Third: Statistical Analysis
 - ERS1 results:



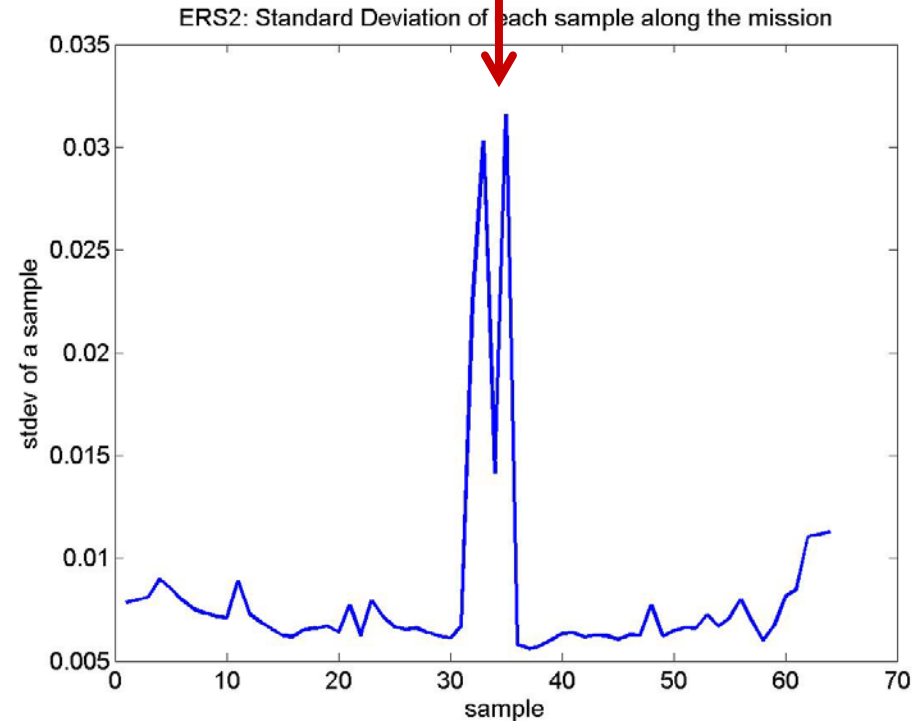
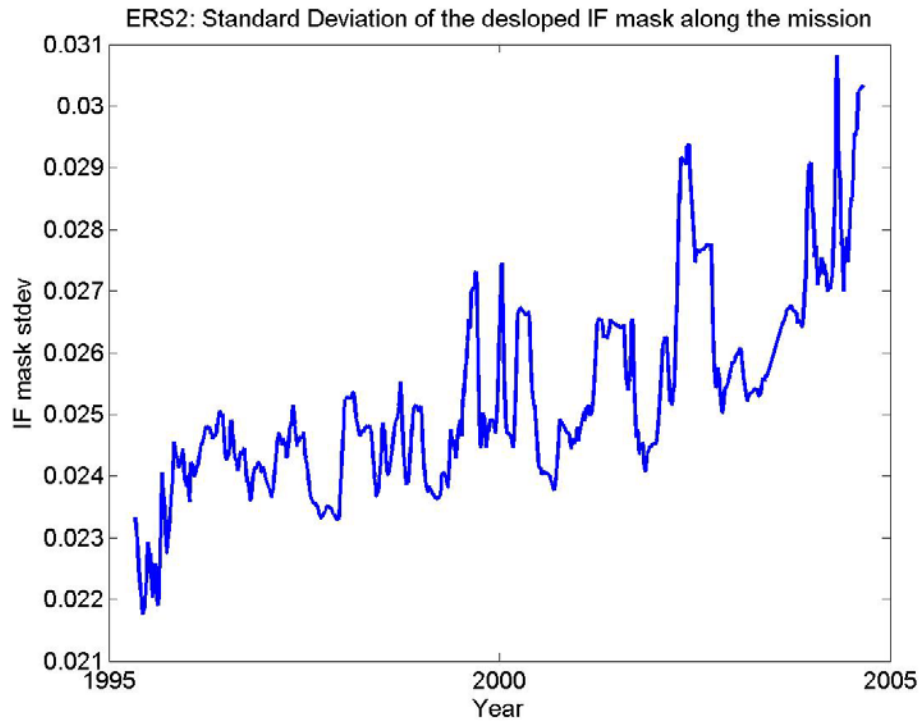
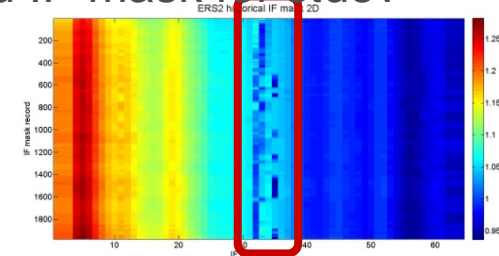
- REAPER IF-mask Quality Assessment: De-sloped IF-mask for stdev
 - Third: Statistical Analysis
 - ERS1 results:



- REAPER IF-mask Quality Assessment: De-sloped IF-mask for stdev
 - Third: Statistical Analysis
 - ERS2 results:

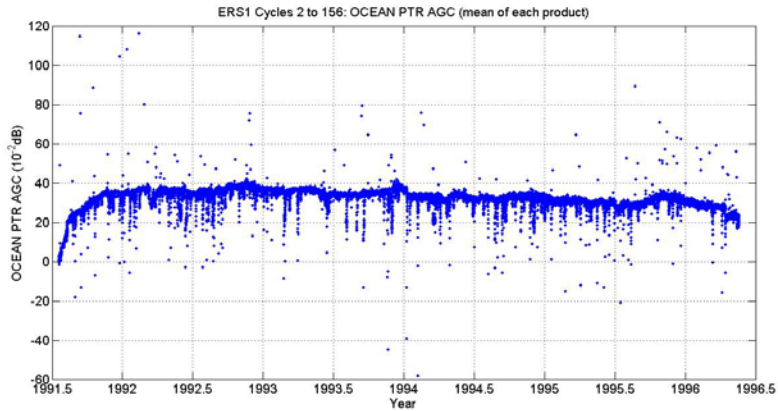


- REAPER IF-mask Quality Assessment: De-sloped IF-mask for stdev
 - Third: Statistical Analysis
 - ERS2 results:

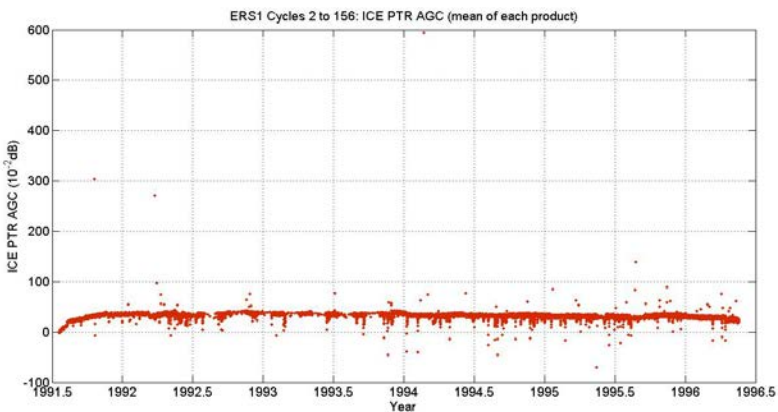
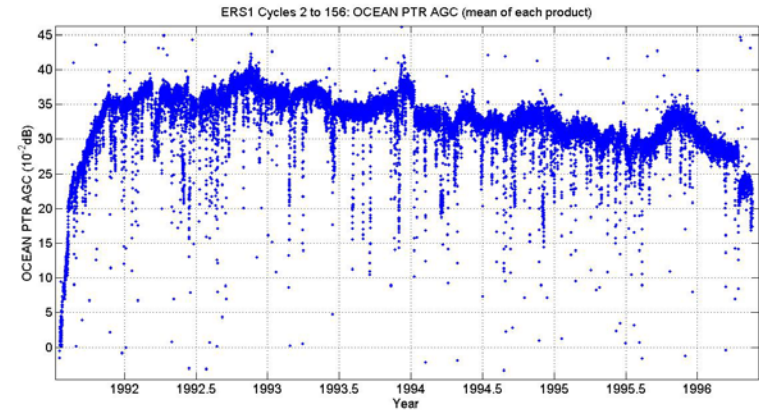


- **REAPER ERS1 PTR Quality Assessment :**
 - Cycles analyzed: Cycle 2 to Cycle 156
 - Total number of products analyzed: 24463
 - Period: 19910803 to 19960602
 - Two parameters monitored: PTR delay and PTR AGC
 - From them, two modes: Tracking OCEAN and Tracking ICE
 - Statistical analysis: mean, max, min, p2p, stdev

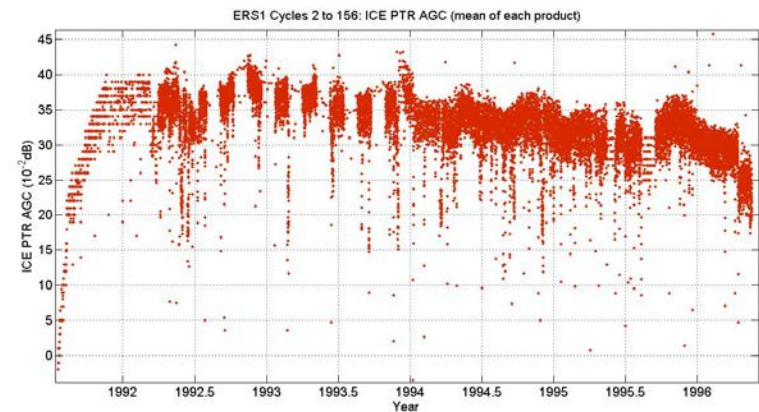
- REAPER ERS1 PTR AGC Quality Assessment, OCEAN (blue) and ICE (red)



Zoom



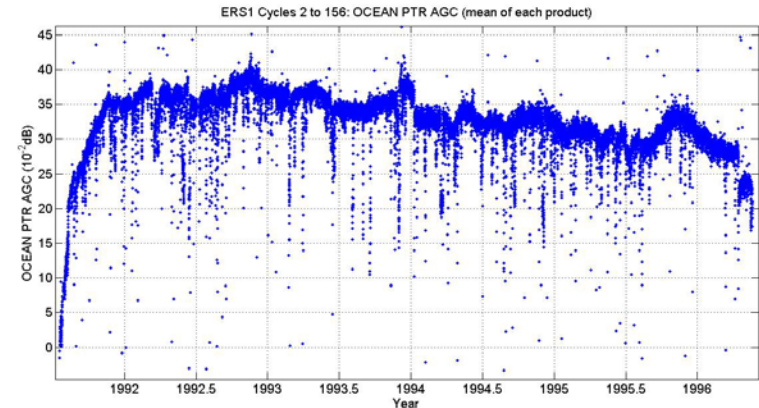
Zoom



- REAPER ERS1 PTR AGC Quality Assessment, OCEAN (blue) and ICE (red)

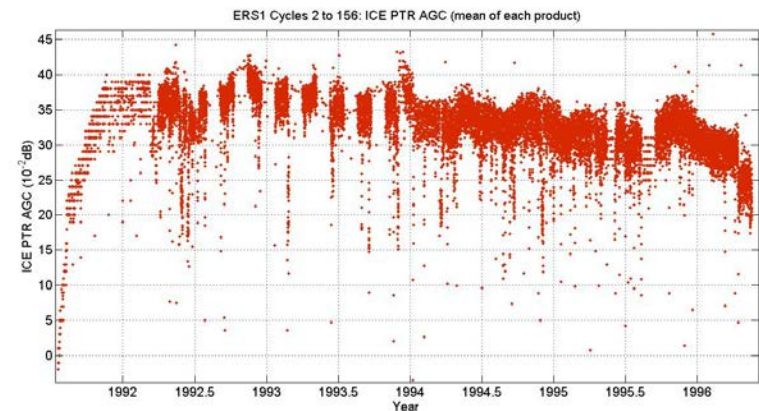
- ERS1 PTR AGC OCEAN, per product:

- Mean from 0 to 0.45 dB : 99.56%
- P2P < 0.2 dB: 99.09%
- Stdev < 0.06 dB: 99.11%

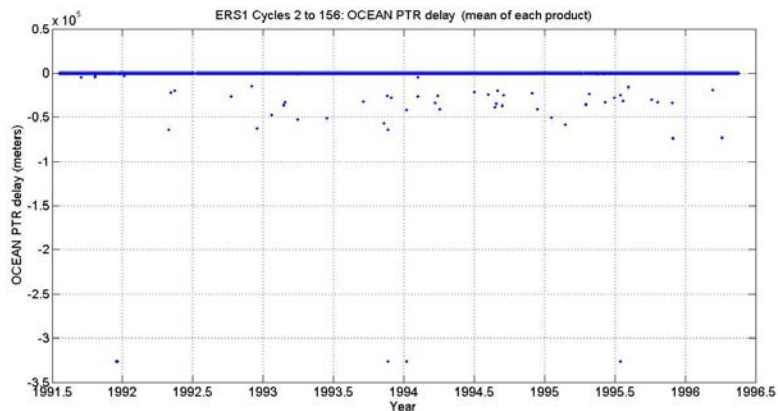


- ERS1 PTR AGC ICE, per product:

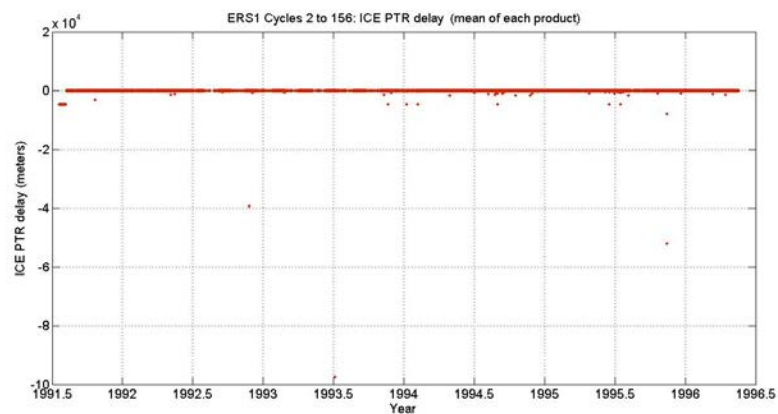
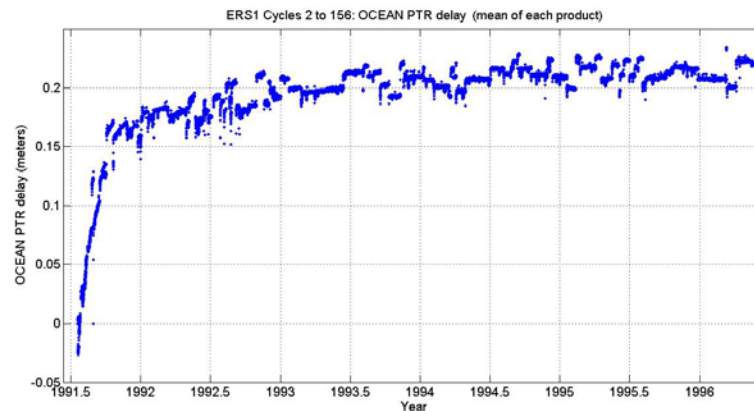
- Mean from 0 to 0.45 dB : 99.56%
- P2P < 0.2 dB: 99.27%
- Stdev < 0.06 dB: 99.32%



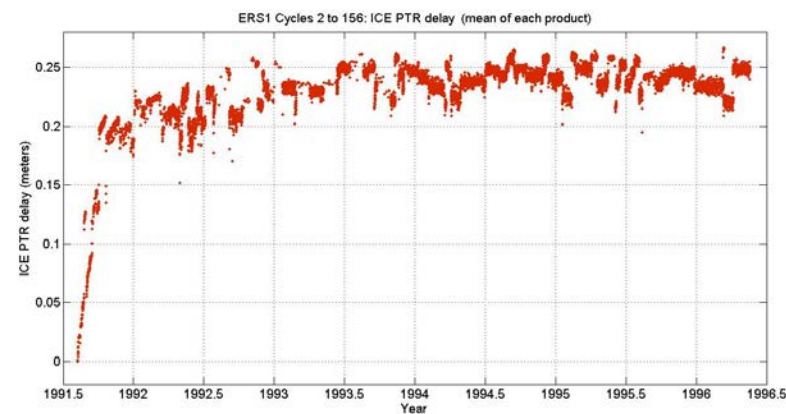
- REAPER ERS1 PTR delay Quality Assessment, OCEAN (blue) and ICE (red)



Zoom



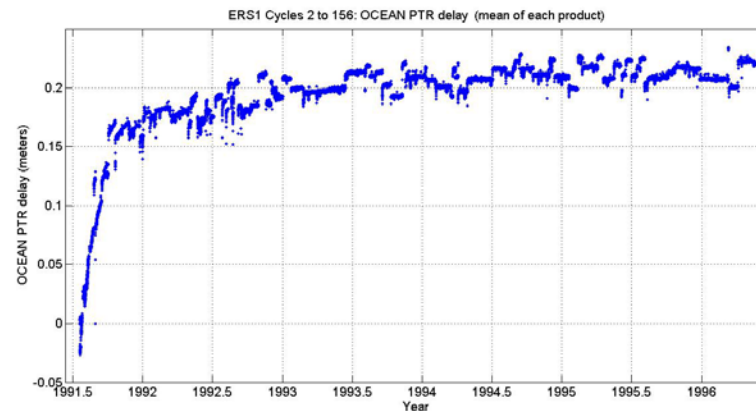
Zoom



- REAPER ERS1 PTR delay Quality Assessment, OCEAN (blue) and ICE (red)

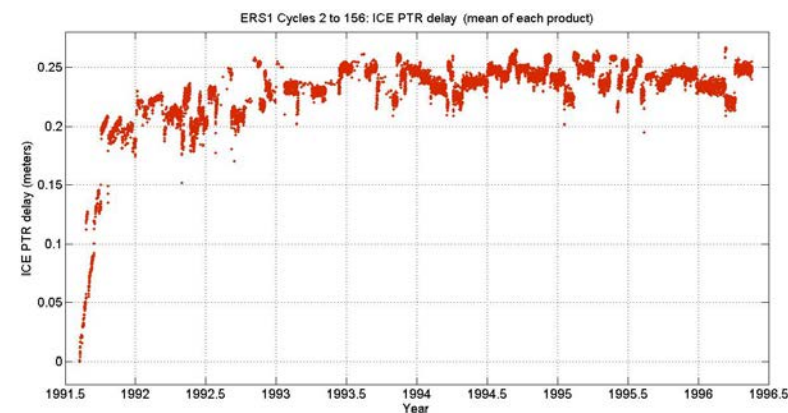
- ERS1 PTR delay OCEAN, per product:

- Mean from 0 to 30cm: 99.62%
- P2P < 2 cm : 99.61%
- Stdev < 1 cm : 99.68%



- ERS1 PTR delay ICE, per product:

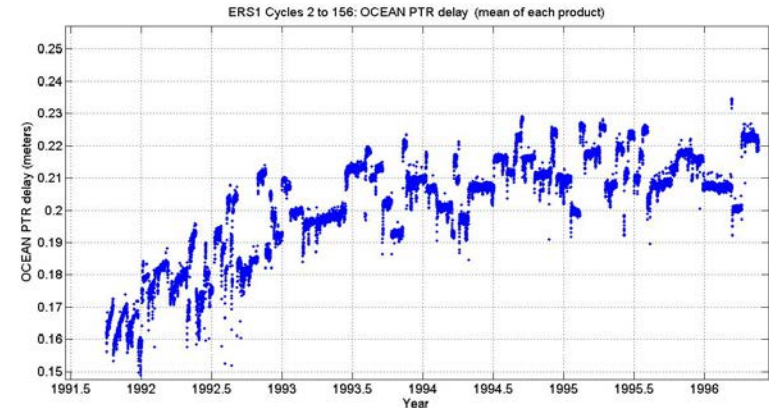
- Mean from 0 to 30cm: 99.19%
- P2P < 2 cm: 94.14%
- Stdev < 1 cm: 99.64%



- REAPER ERS1 PTR delay Quality Assessment, OCEAN (blue) and ICE (red)

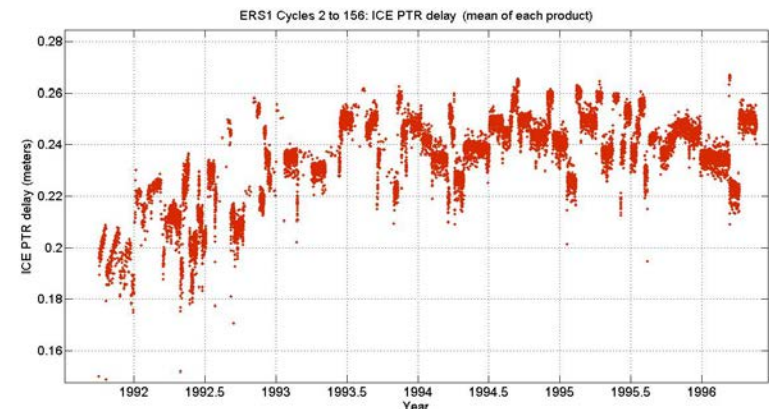
- ERS1 PTR delay OCEAN, per product:

- Mean from 0 to 30cm: 99.62%
- P2P < 2 cm : 99.61%
- Stdev < 1 cm : 99.68%



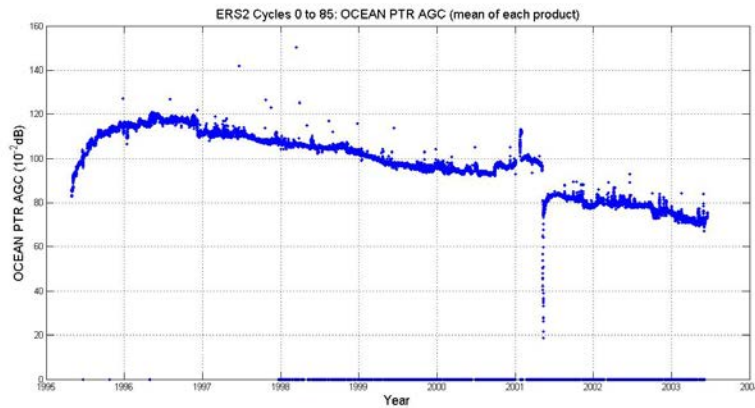
- ERS1 PTR delay ICE, per product:

- Mean from 0 to 30cm: 99.19%
- P2P < 2 cm: 94.14%
- Stdev < 1 cm: 99.64%

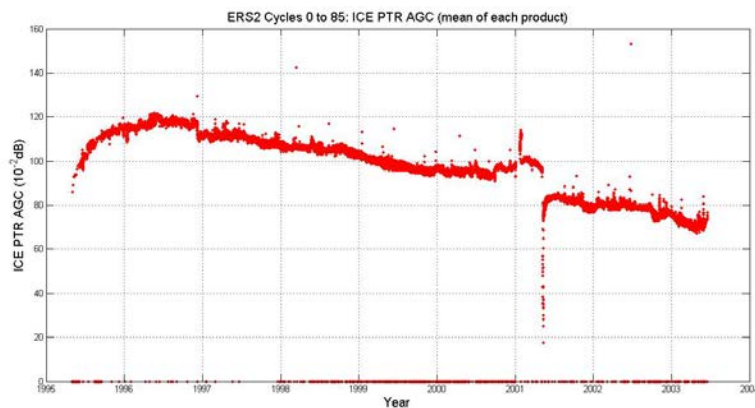
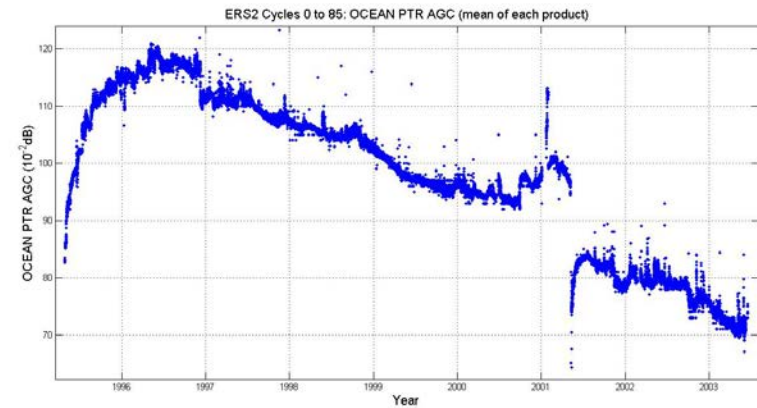


- **REAPER ERS2 PTR Quality Assessment :**
 - Cycles analyzed: Cycle 0 to Cycle 85
 - Total number of products analyzed: 43059
 - Period: 19950514 to 20030702
 - Two parameters monitored: PTR delay and PTR AGC
 - From them, two modes: Tracking OCEAN and Tracking ICE
 - Statistical analysis: mean, max, min, p2p, stdev

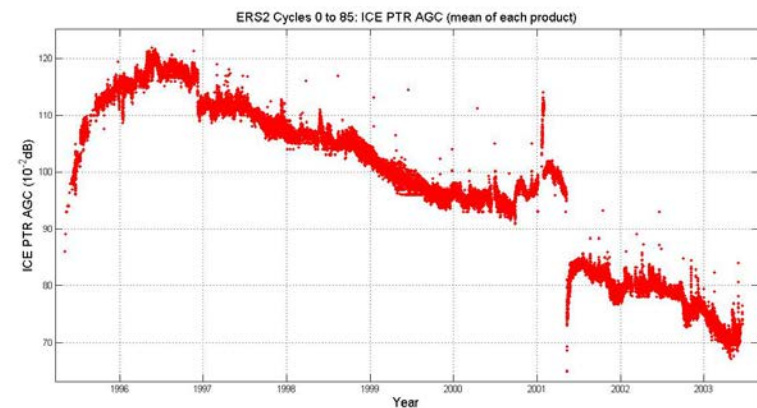
- REAPER ERS2 PTR AGC Quality Assessment, OCEAN (blue) and ICE (red)



➔
Zoom



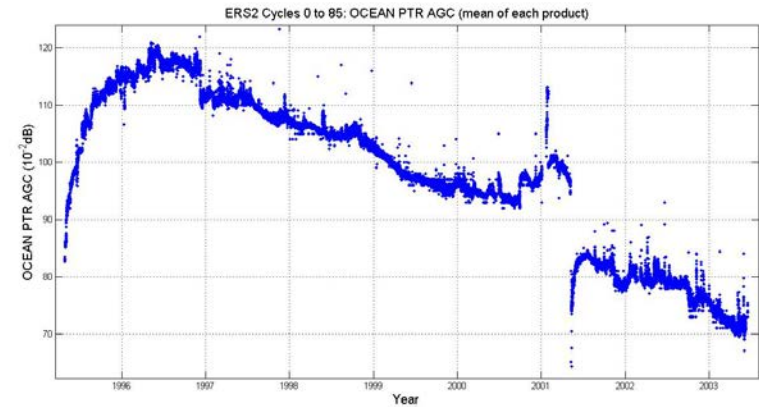
➔
Zoom



- REAPER ERS2 PTR AGC Quality Assessment, OCEAN (blue) and ICE (red)

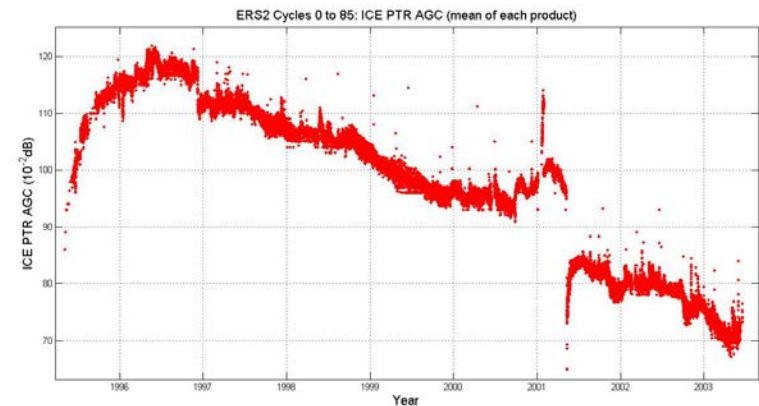
- ERS2 PTR AGC OCEAN, per product:

- Mean from 0 to 1.25 dB : 99.98%
- P2P < 0.2 dB: 99.92%
- Stdev < 0.06 dB: 99.94%

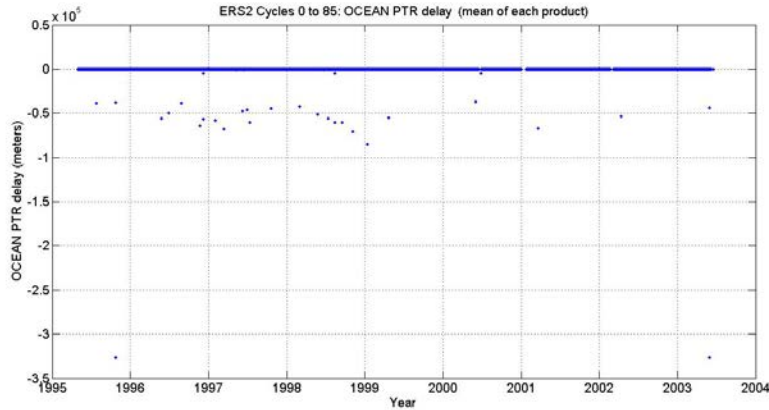


- ERS2 PTR AGC ICE, per product:

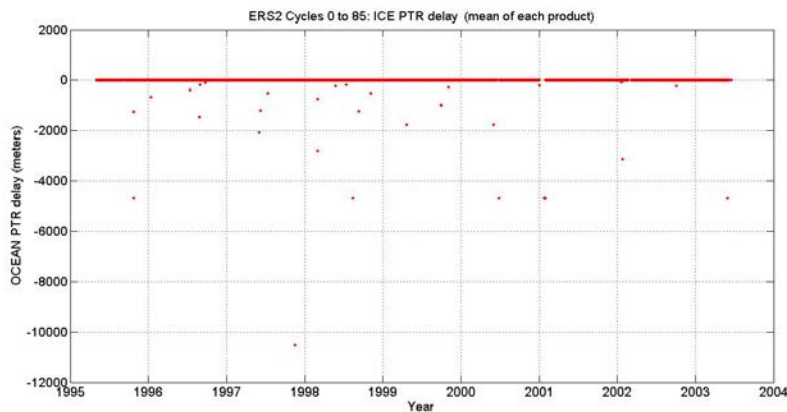
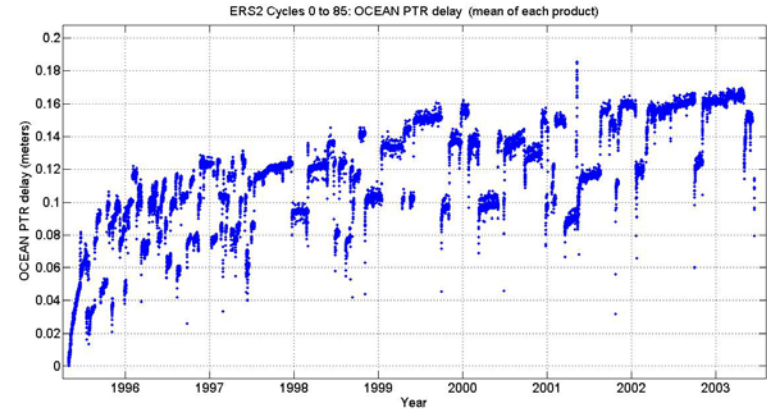
- Mean from 0 to 1.25 dB : 99.99%
- P2P < 0.2 dB: 99.93%
- Stdev < 0.06 dB: 99.93%



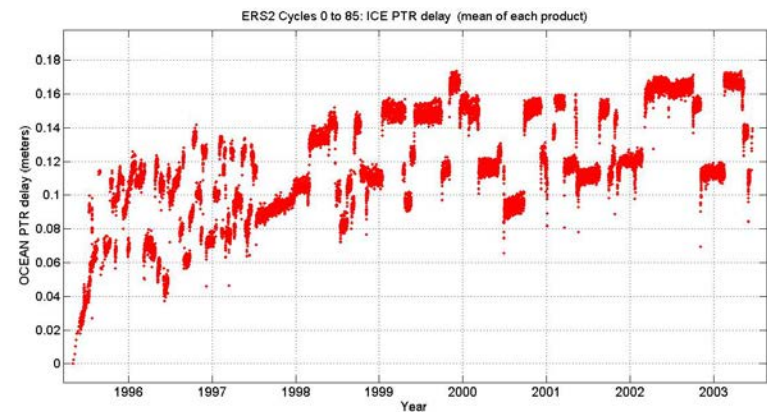
- REAPER ERS2 PTR delay Quality Assessment, OCEAN (blue) and ICE (red)



Zoom



Zoom



- REAPER ERS2 PTR delay Quality Assessment, OCEAN (blue) and ICE (red)

- ERS2 PTR delay OCEAN, per product:

- Mean from 0 to 20cm: 99.91 %
- P2P < 2 cm : 99.81 %
- Stdev < 1 cm : 99.87 %

- ERS2 PTR delay ICE, per product :

- Mean from 0 to 20cm: 99.67 %
- P2P < 2 cm: 99.83 %
- Stdev < 1 cm: 99.90 %

