



„Satelitarne metody wyznaczania pozycji we
współczesnej geodezji i nawigacji”

Wrocław, 02-04.06.2011



International SLR service

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<http://ilrs.gsfc.nasa.gov/>

SLR STATIONS:

EUROLAS	–	18 stations
WPLTN	–	17 stations
NASA	–	8 stations

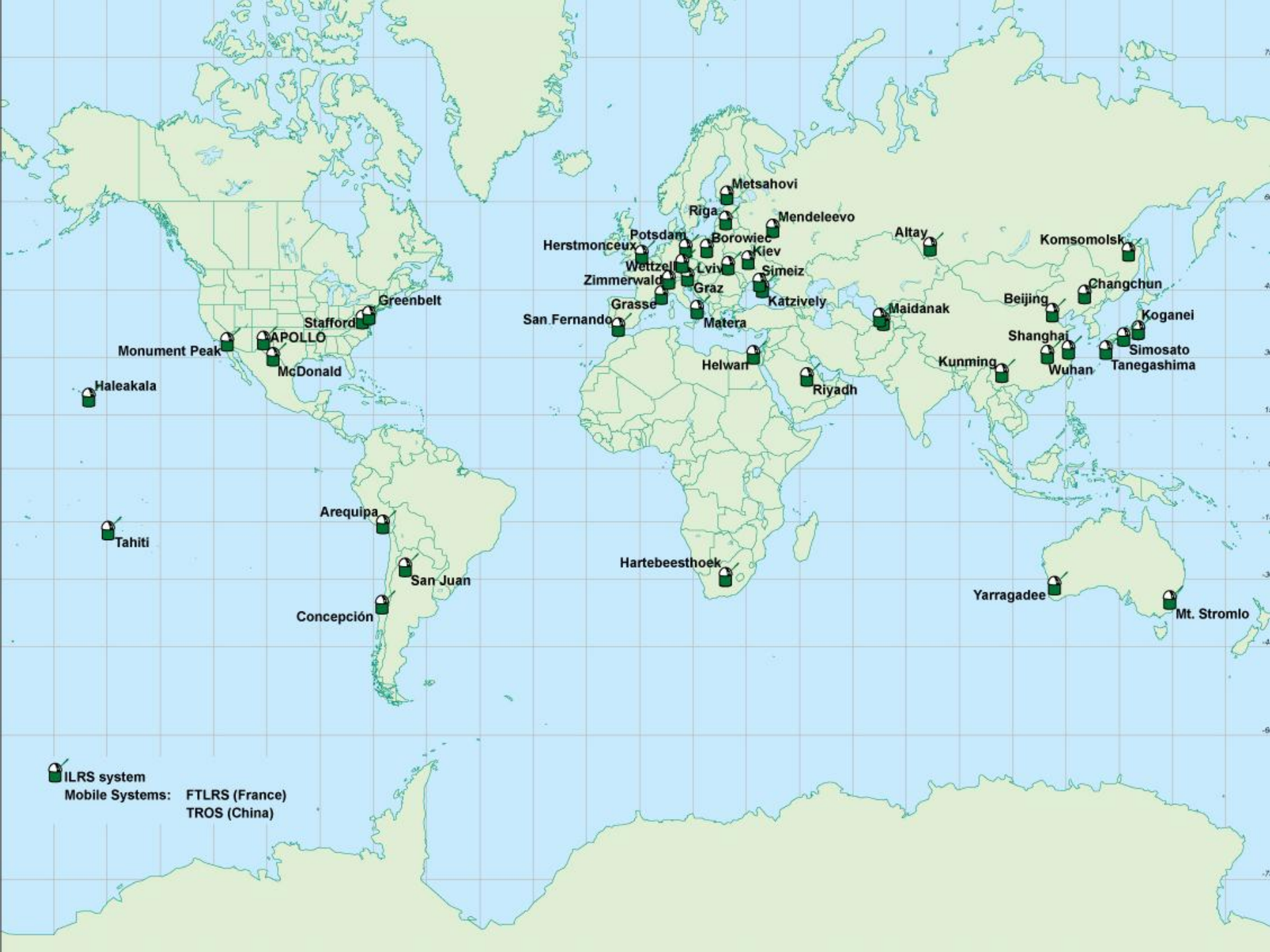
DATA CENTERS:


- EUROLAS Data Center (EDC)
- Crustal Dynamics Data Information System NASA (CDDIS)

ANALYSIS CENTERS: 8 SLR + 4 LLR

Associate Analysis Centers: 17

SLR SATELLITES: 27



 ILRS system
Mobile Systems: FTLRS (France)
TROS (China)



Graz



Matera



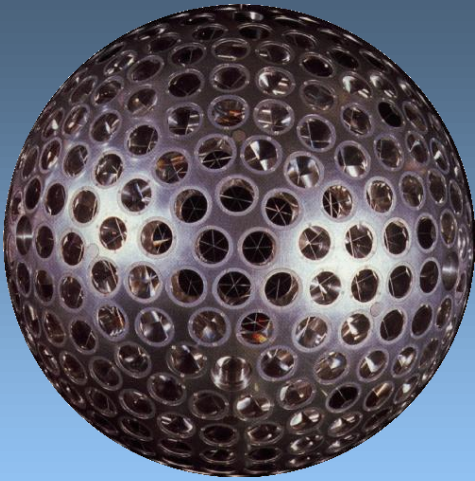
Yarragadee



Monument Peak

17. 3. 2000

Satellite

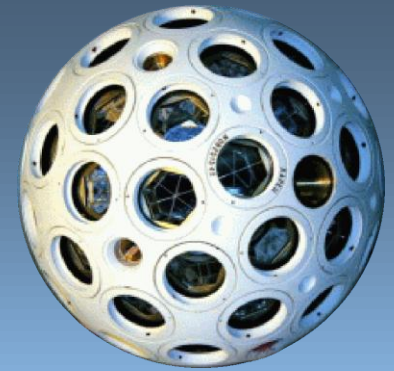


Lageos

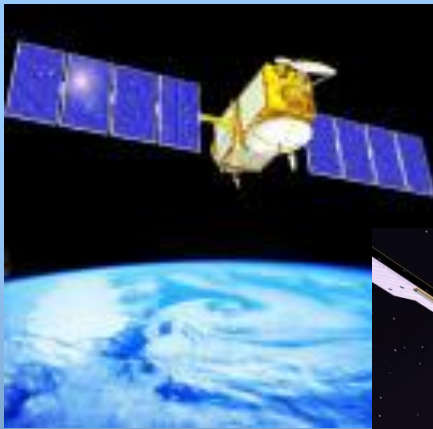


Stella

Starlette



LARES



Jason



Envisat



Grace

17th International Workshop on Laser Ranging
“Extending the Range”
23rd ILRS General Assembly

Bad Koetzing, Germany
May 16 – 20, 2011

Organized by

Bundesamt fuer Kartographie und Geodaesie (BKG)

Technische Universitaet Muenchen (TUM)

International Laser Ranging Service (ILRS)

148 participants

88 oral presentations and 50 posters

<http://www.fs.wetzell.de/veranstaltungen/slr/17thlaserworkshop/index.html>

Sessions:

- Science
- Operations
- Atmospheric Refraction Correction
- SLR Techniques
- Modeling and Bias issues
- Improving Ranging Accuracy, Calibration and Local Ties
- Improving support for GNSS
- Retroreflector Arrays
- Interaction between Data-User and Stations
- New Laser Ranging Technologies and Capabilities
- Lunar Laser Ranging
- In-Sky-Laser-safety
- System Automation
- Wettzell Observatory

Geodätisches Observatorium Wettzell



The most important news

- 10 kHz SLR system in Graz
- New kHz two-color SLR system in Wettzell
- Two new Korean SLR stations
- kHz stations in China
- Mount Stromlo SLR station automation
- LARES – relativity satellite
- Spin of Ajisai and BLITS
- BLITS – zero signature satellite
- Laser Ranging to NASA's Lunar Reconnaissance Orbiter (LRO)
- European Laser Timing Experiment (ELT) to the International Space Station
- Combined GNSS and SLR analysis
- Compass navigation system

SLR Station Accuracy – analysts parameters

Long term bias stability

Short term bias stability

RMS of fit/station

NP residuals per one arc – graphic representation

Station position stability (3D) => 1 mm

N, E, U graphic representation (GPS included?)

STATIONS 1994 - 2008

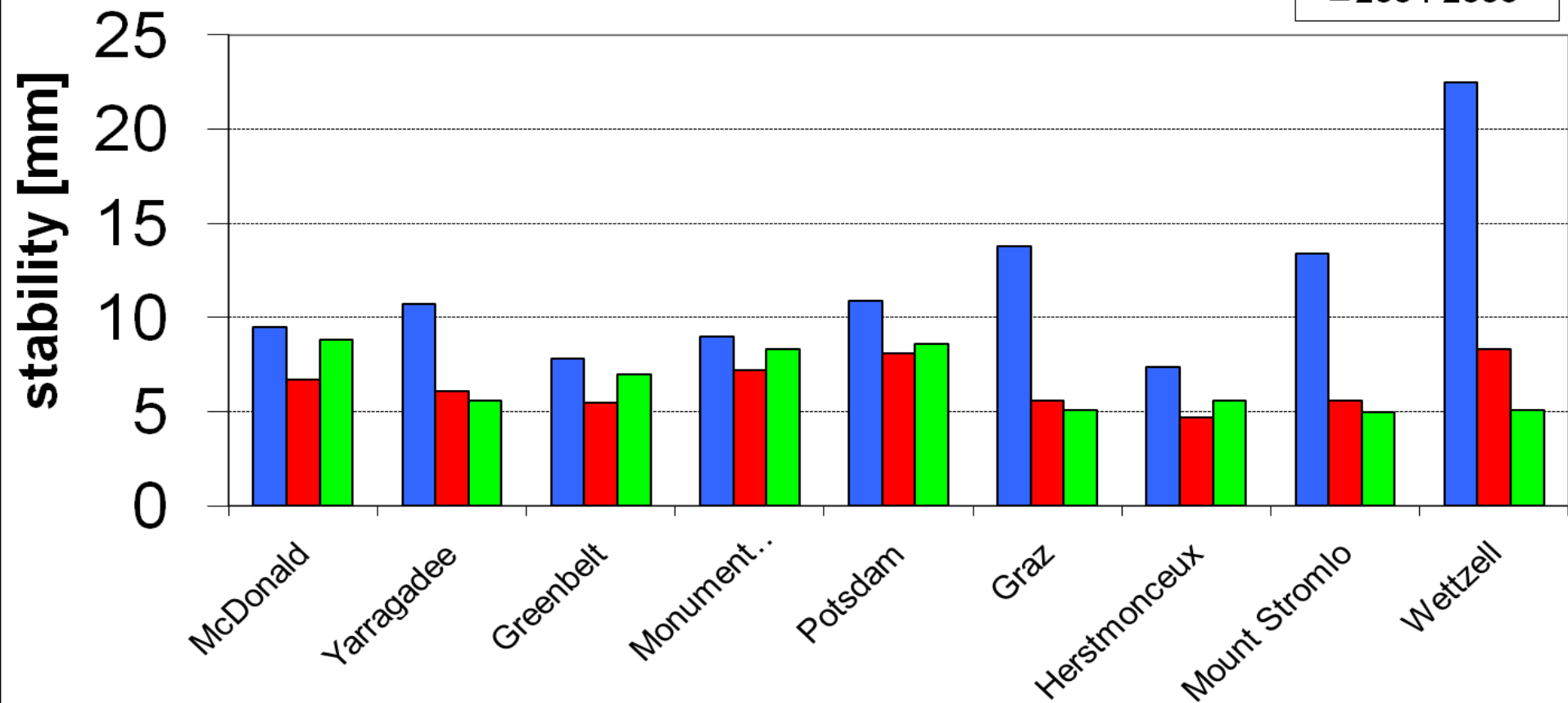
		First – Last	Points
McDonald	7080	94-01 – 08-12	179
Yarragadee	7090	94-01 – 08-12	178
Greenbelt	7105	94-01 – 08-12	170
Monument Peak	7110	94-01 – 08-12	175
Graz	7839	94-01 – 08-12	179
Herstmonceux	7840	94-01 – 08-12	179
Wettzell	8834	94-01 – 08-12	171
Potsdam	7836–7841	94-01 – 08-12	172
Orroral-Mt.Stromlo	7843-7849-7825	94-01 – 08-12	154

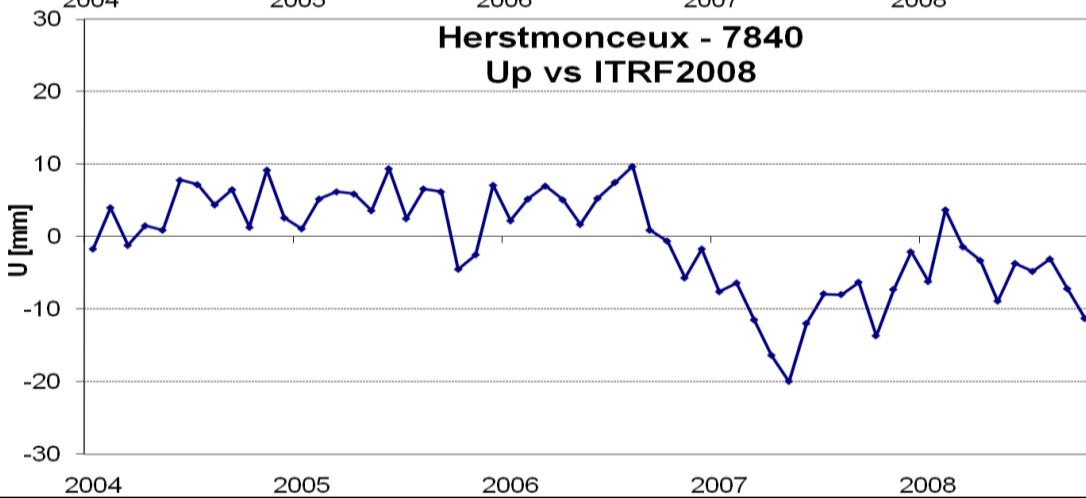
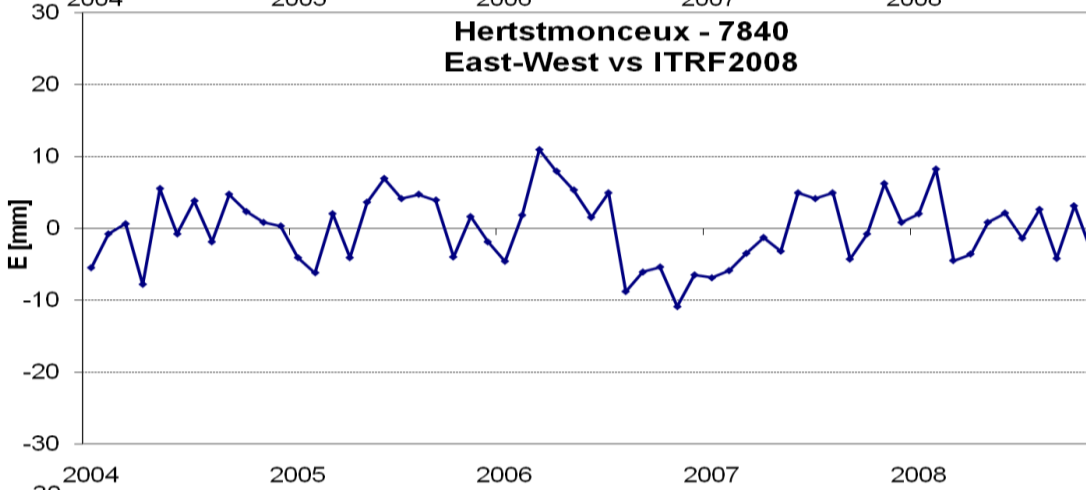
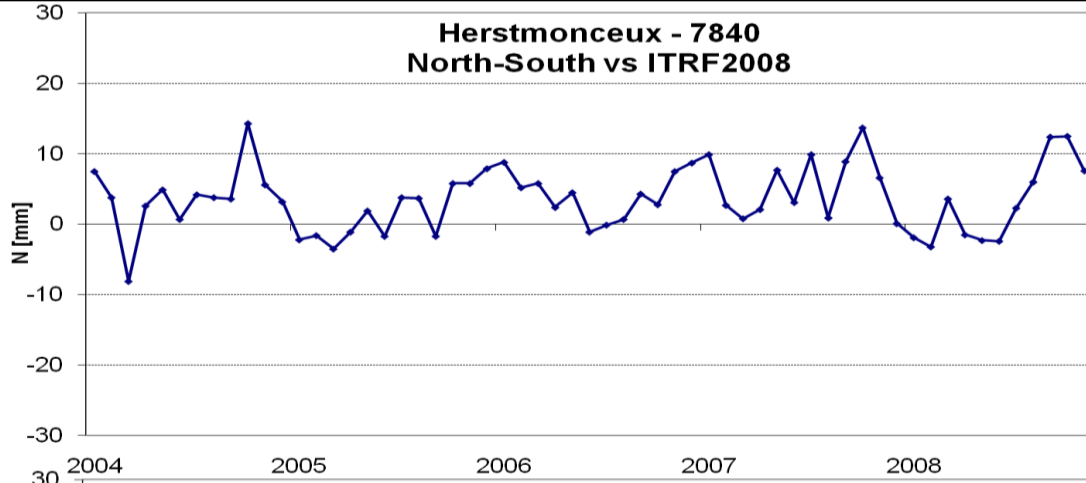
Station Position Stability

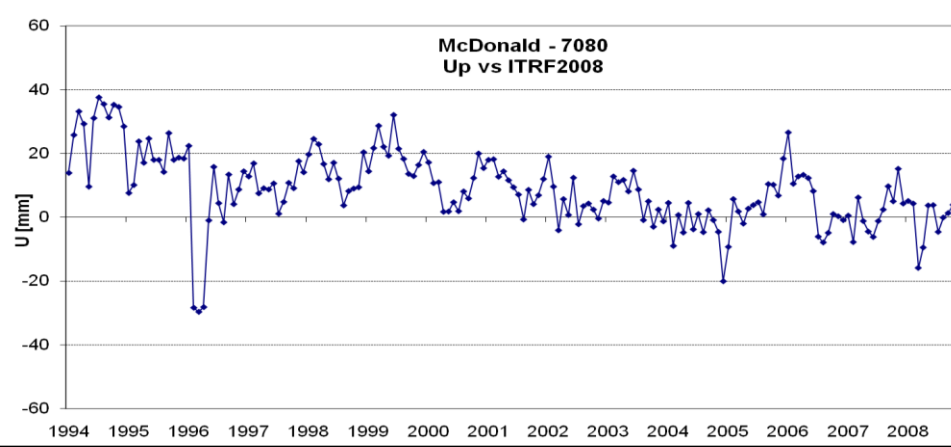
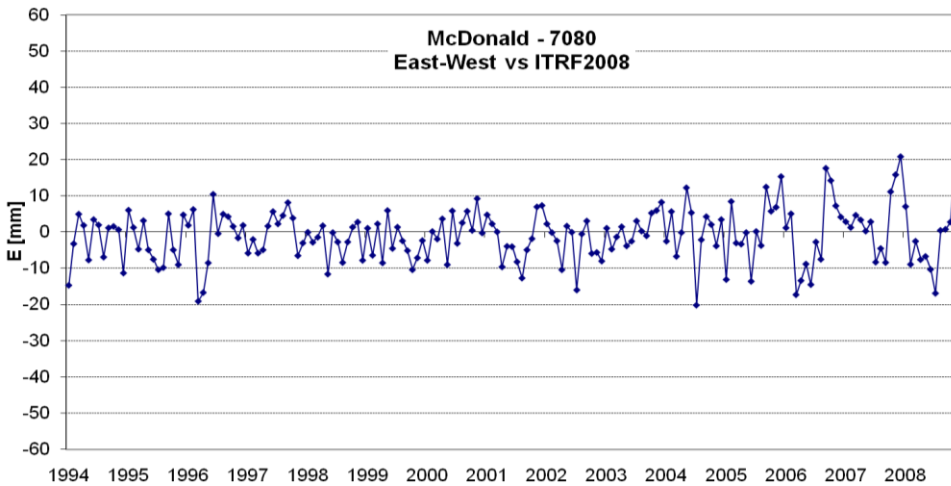
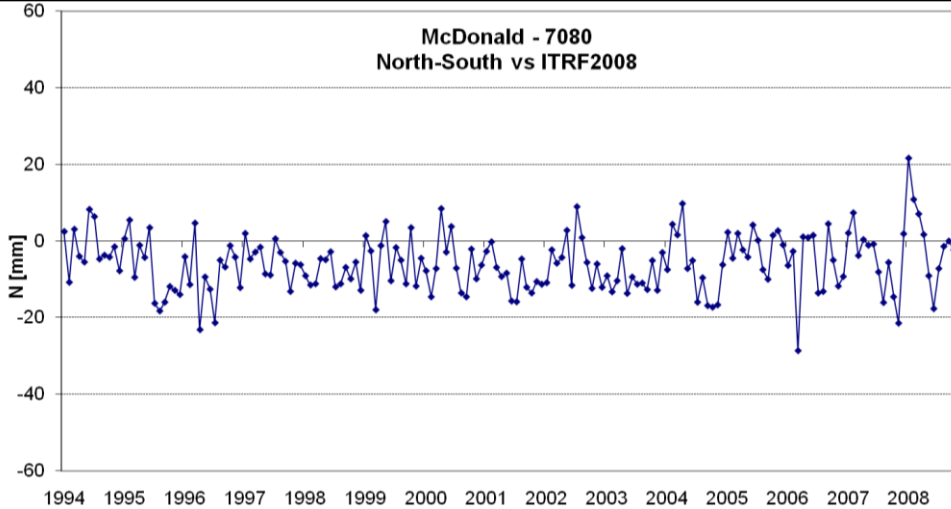
1994-1998

1999-2003

2004-2008





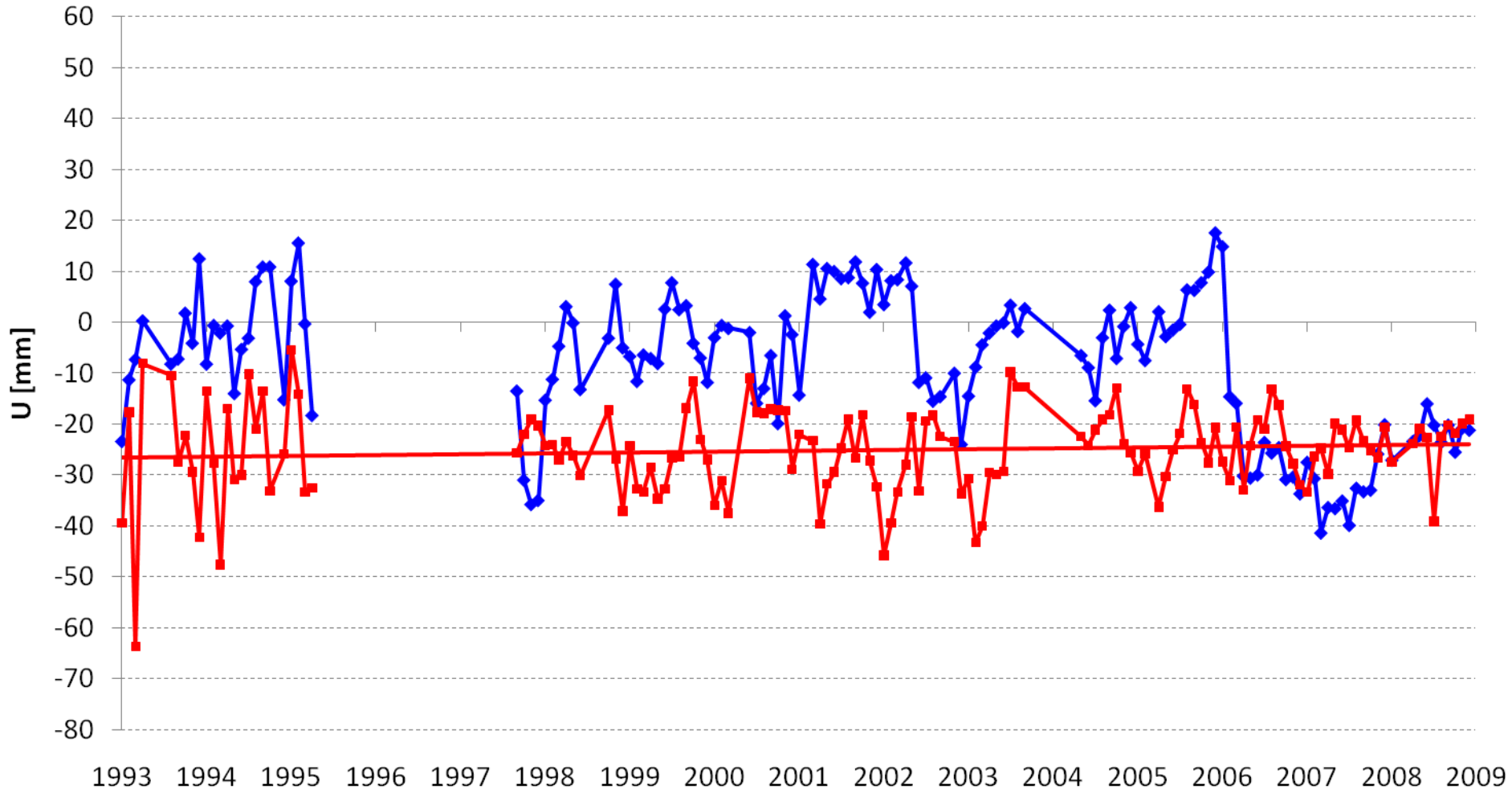


Zimmerwald 7810-ZIMM

Up

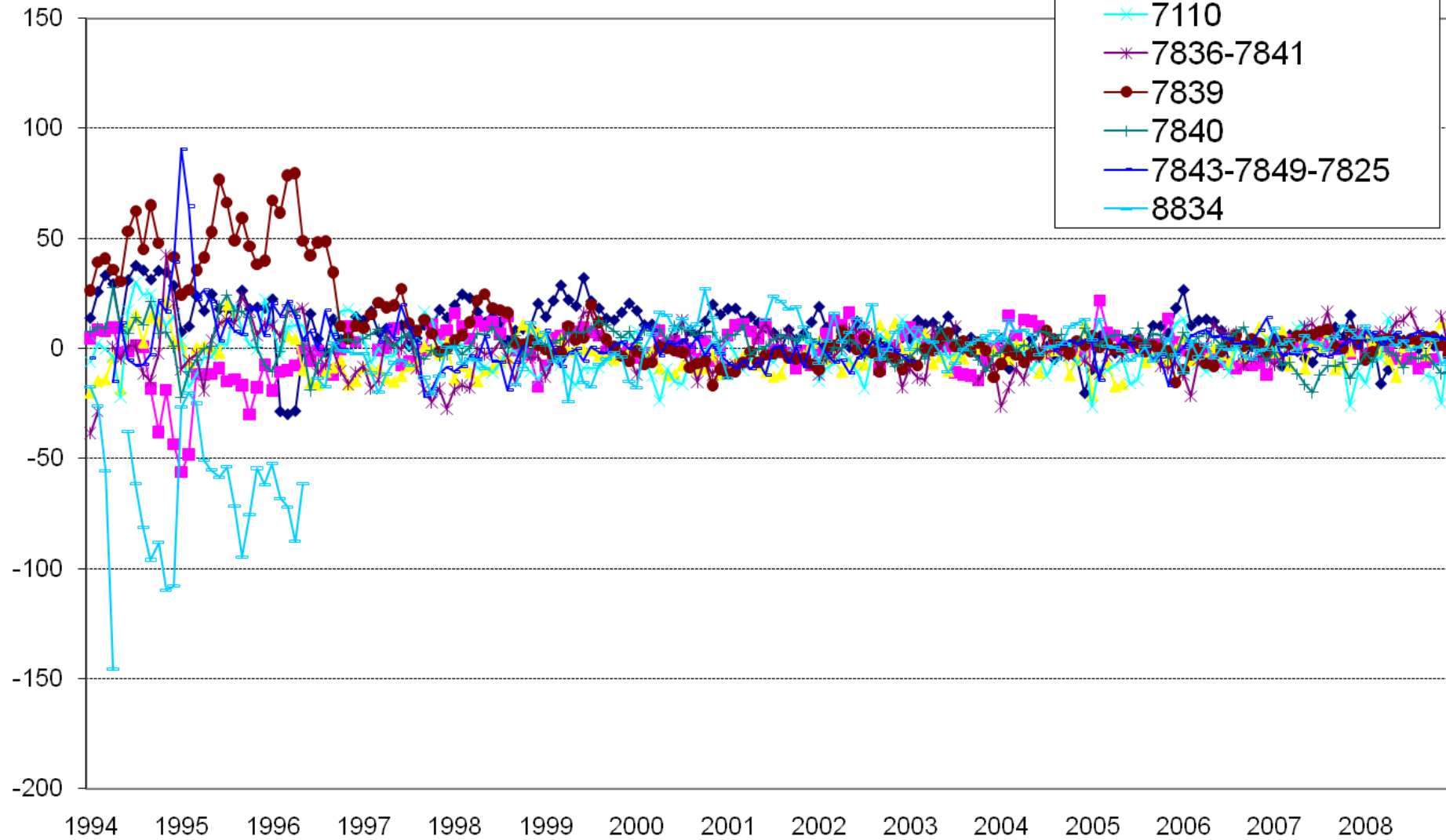
7810

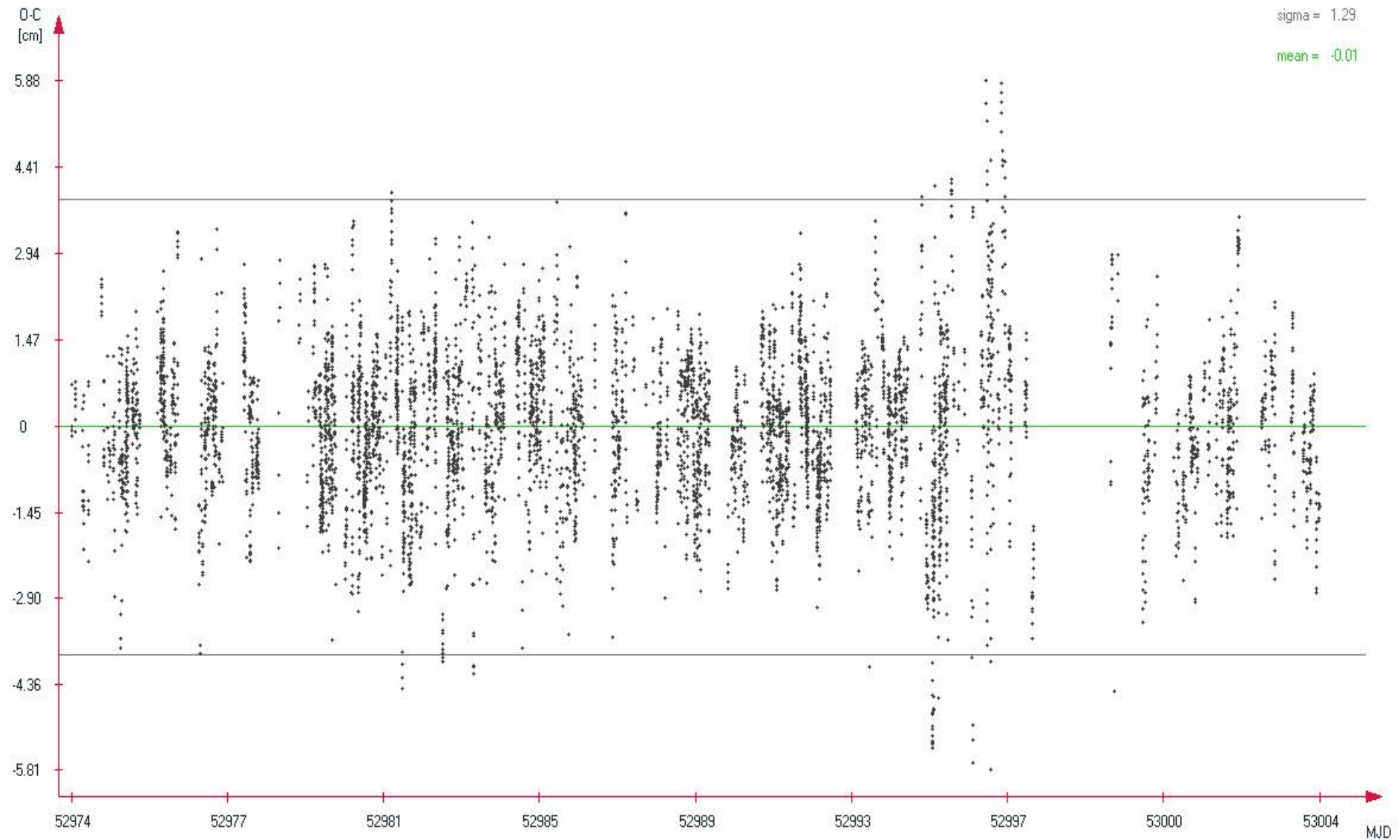
ZIMM

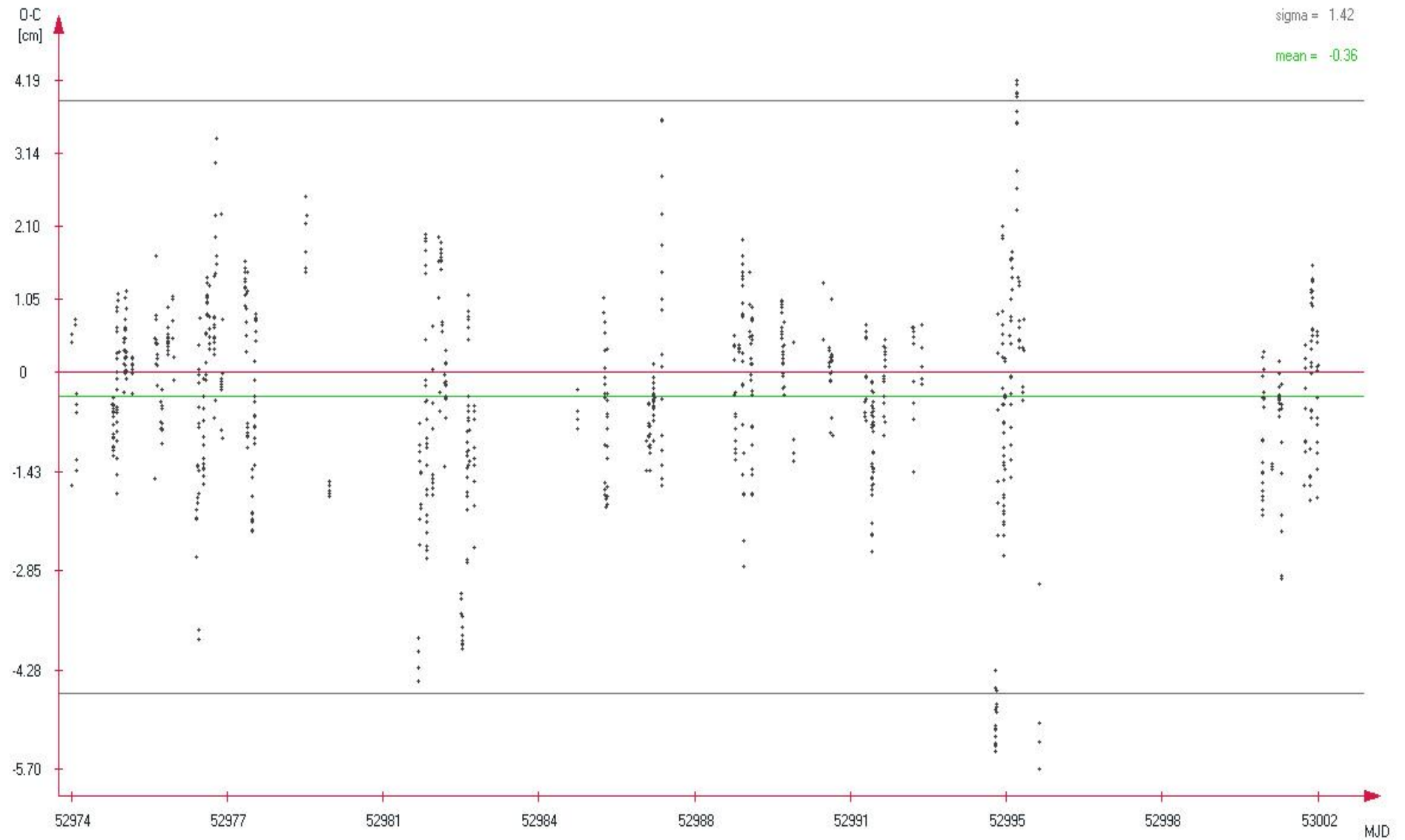


Vertical Component 1994 - 2008

U [mm]







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