

Displacements of GNSS Antenna Position due to Thermal Bending of Pillar Monument

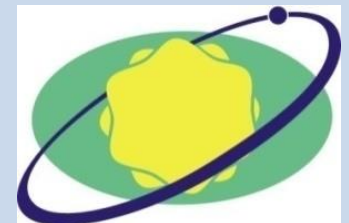
**L. Gerhatova, J. Hefty, J. Papco,
M. Minarikova**

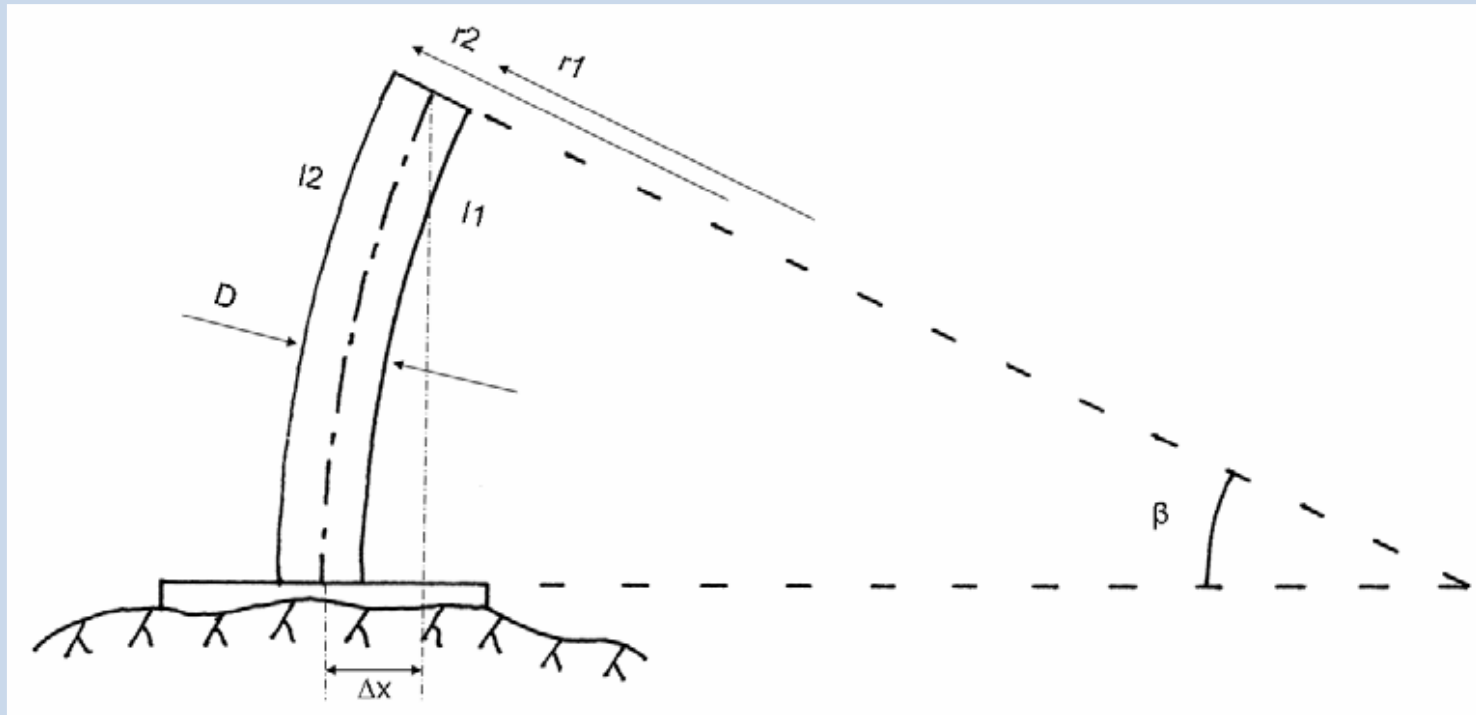
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**SLOVAK UNIVERSITY OF
TECHNOLOGY IN BRATISLAVA**

EUREF Symposium 2015





$$\Delta x = \frac{l^2}{2} \cdot \frac{\alpha}{D} \cdot \Delta t$$

Δx – the pillar top displacement

l – height of the pillar

D – diameter of the pillar

α – thermal expansion coefficient

Δt – temperature difference between heated and cooled sides of the pillar

***Lehner, W. M.: Evaluation of Environmental Stresses on GNSS-Monuments.
Vienna University of Technology, 2011***

MOP2 (EPN STATION)



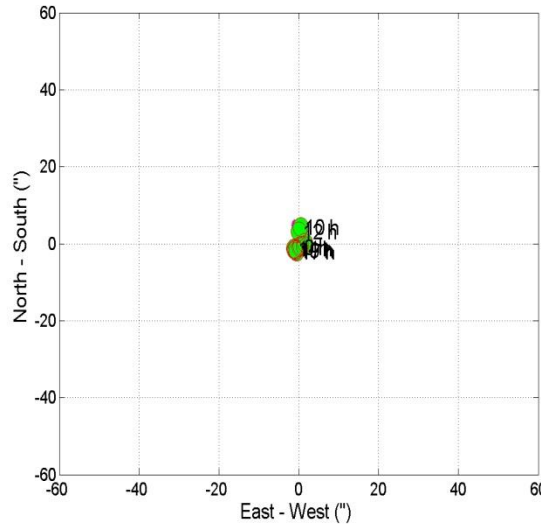
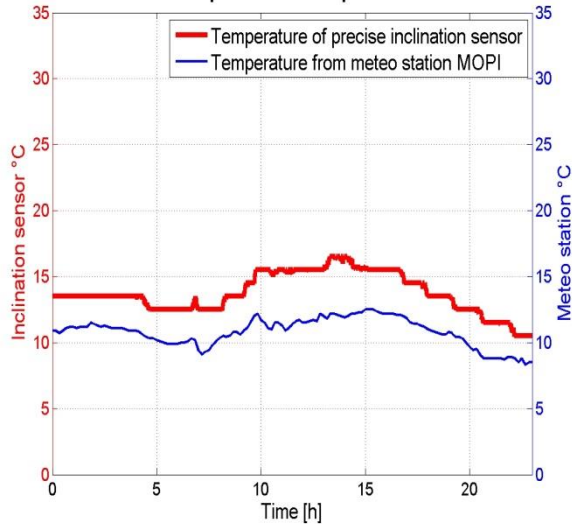
SUT1 (CEGRN STATION)



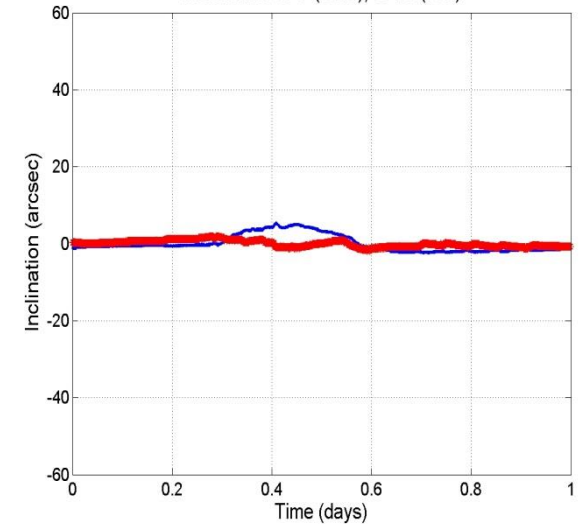
MOP2 (EPN STATION) – 6-7.4.2014

0.7 Sunshine hours, precipitations 1 mm, temperature max 12 °C, min 8 °C

Comparison of temperature

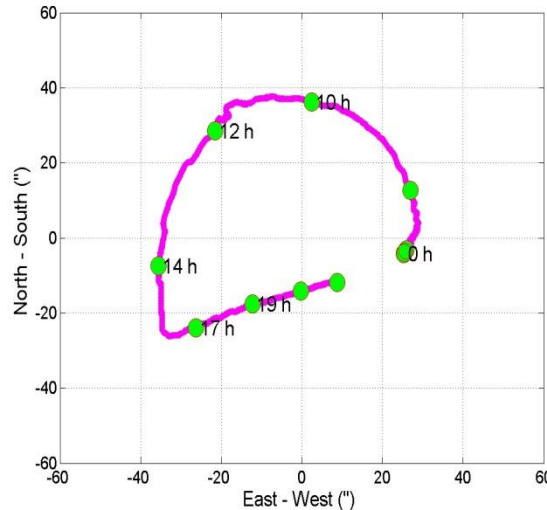
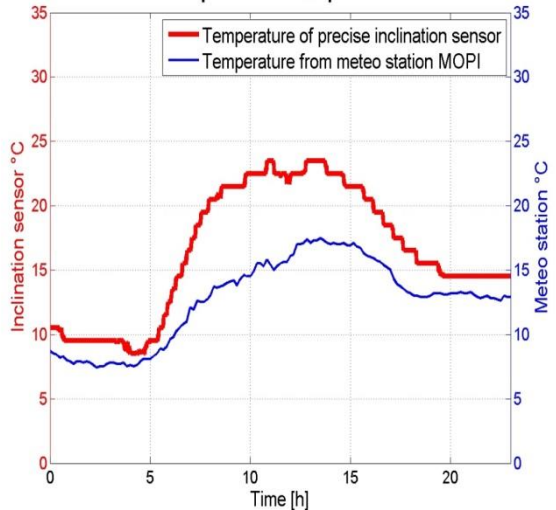


Inclination N-S (blue), E-W (red)

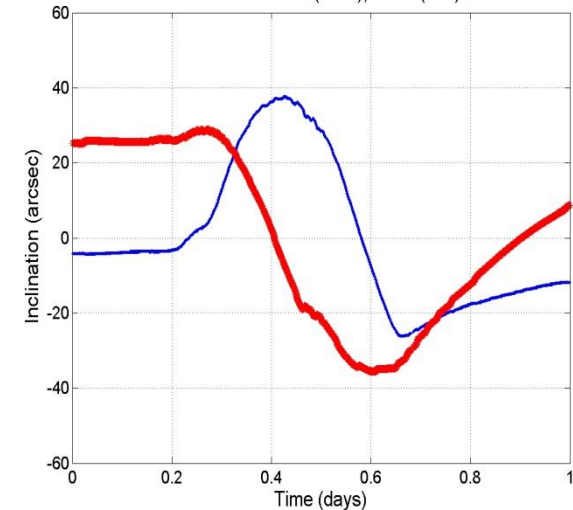


11.2 Sunshine hours, without precipitations, temperature max 16 °C, min 8 °C

Comparison of temperature

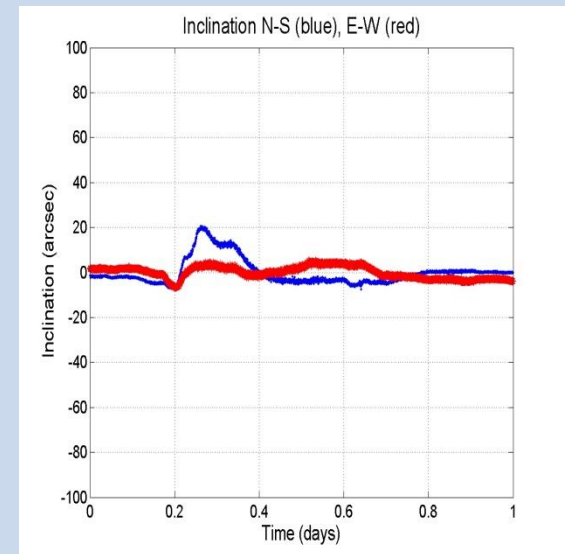
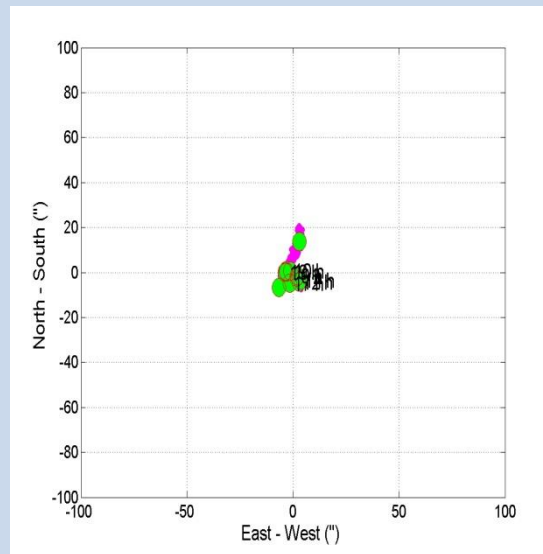
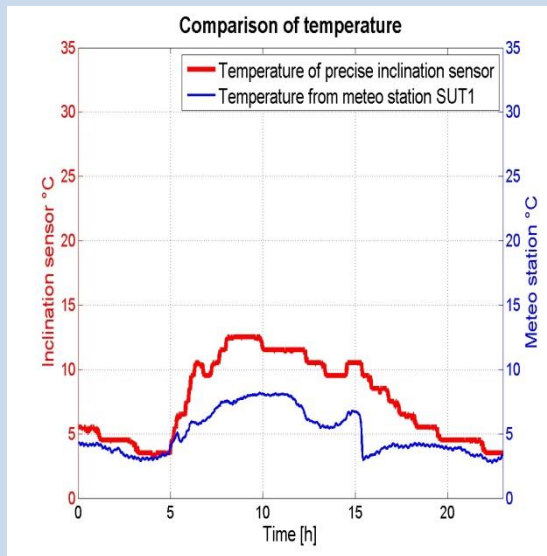


Inclination N-S (blue), E-W (red)

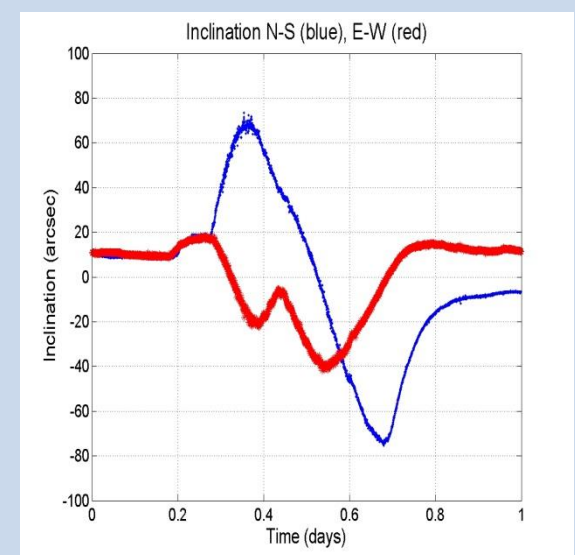
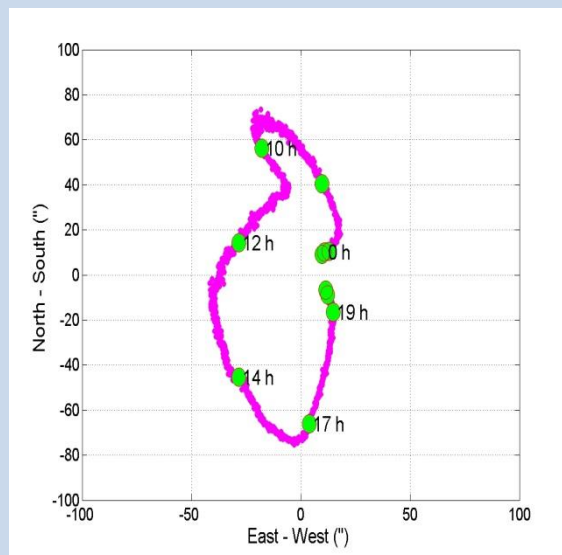
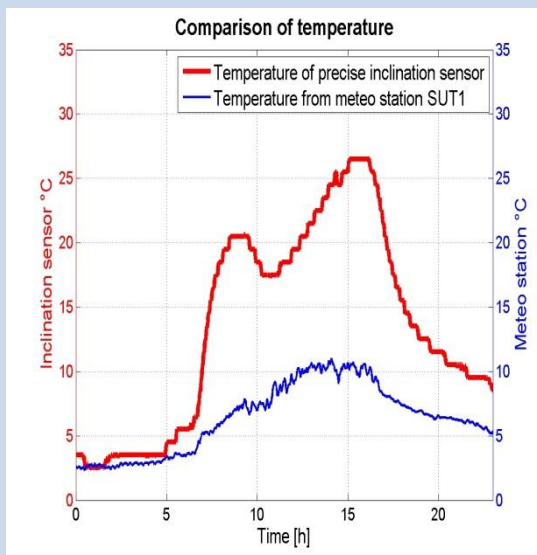


SUT1 (CEGRN STATION) – 2-3.4.2015

1.2 Sunshine hours, precipitations 4 mm, temperature max 8 °C, min 3 °C



10 Sunshine hours, without precipitations, temperature max 11 °C, min 2 °C



**Thank you for your
attention!**

more details on poster P 3.02