

ERS-2 non linearity

Presented by
Xavier Neyt / RMA



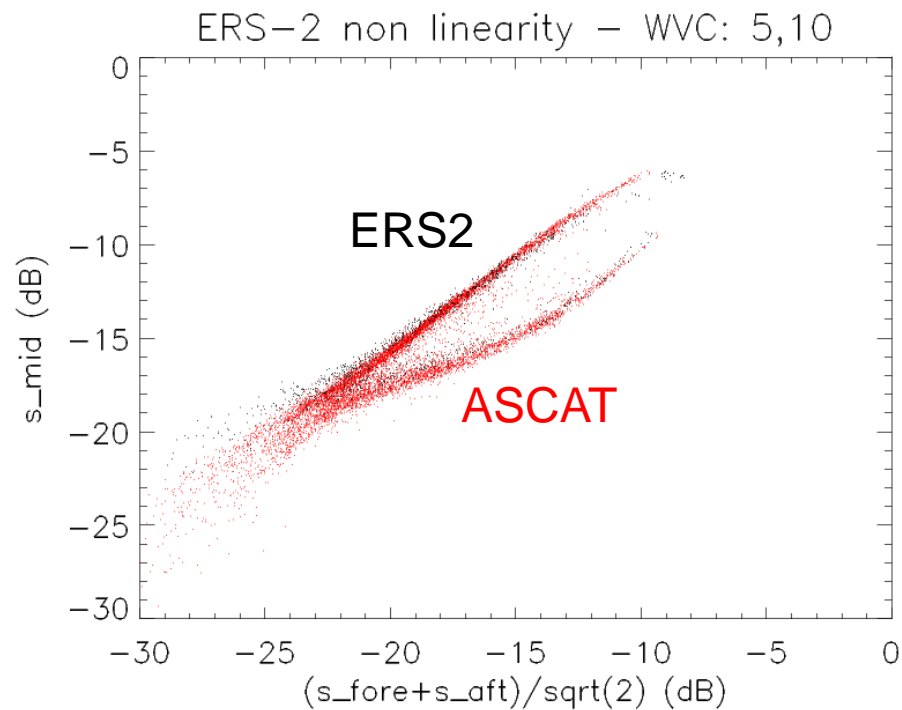
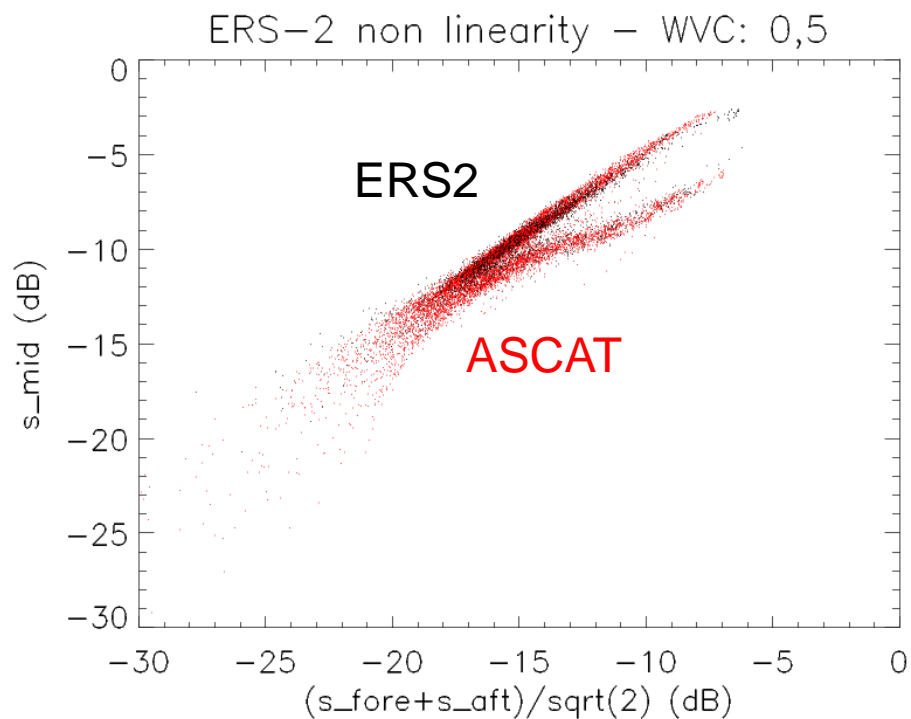
scirocco
scatterometer instrument
competence centre



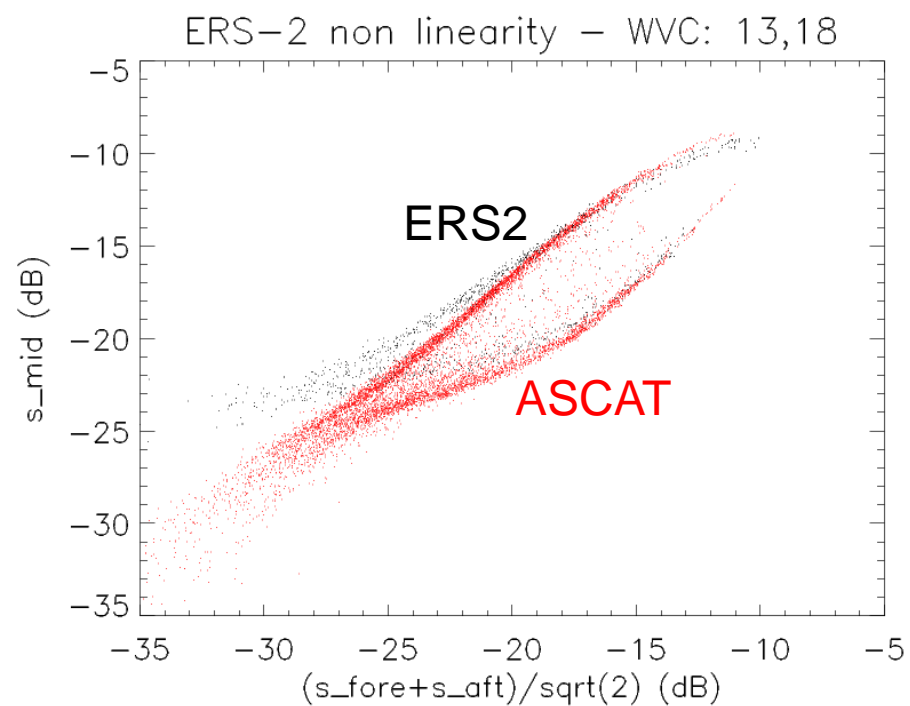
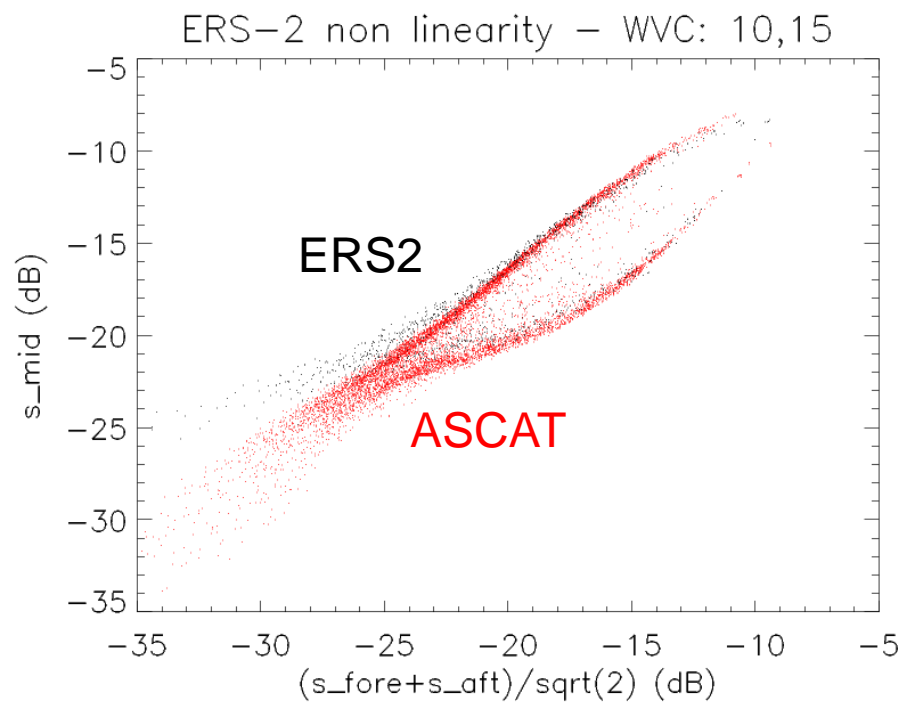
Outline

- Sigma0 comparison
 - ERS2 (ASPS) vs ASCAT-A
 - ERS1 (UWI) vs ERS2 (UWI)
 - Effect of noise subtraction on sigma0
- Effect of noise subtraction on sigma0
- Noise Equivalent Sigma Zero

22-Oct-2014



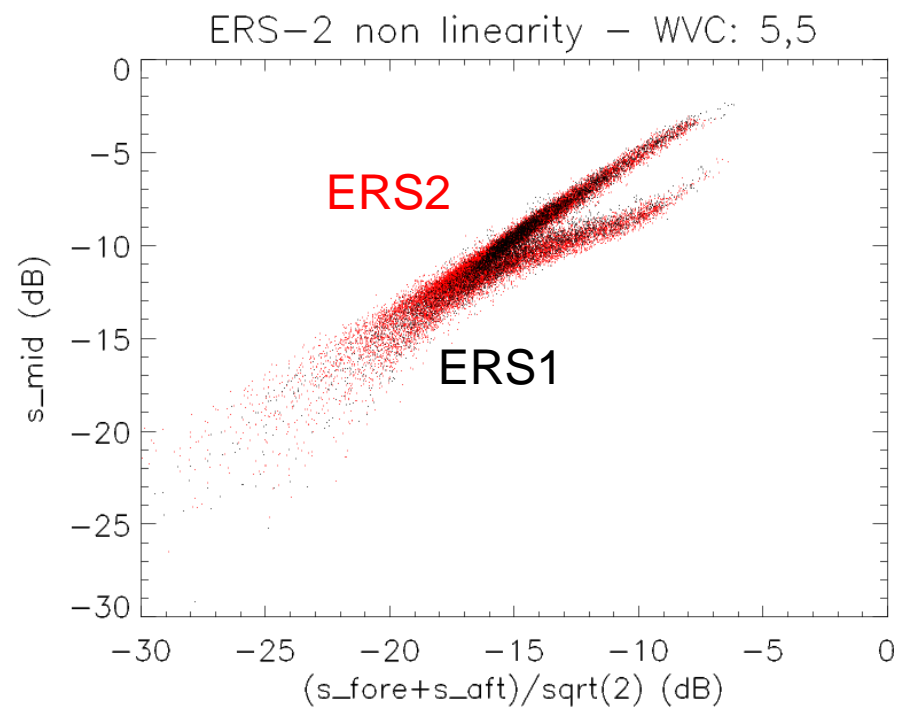
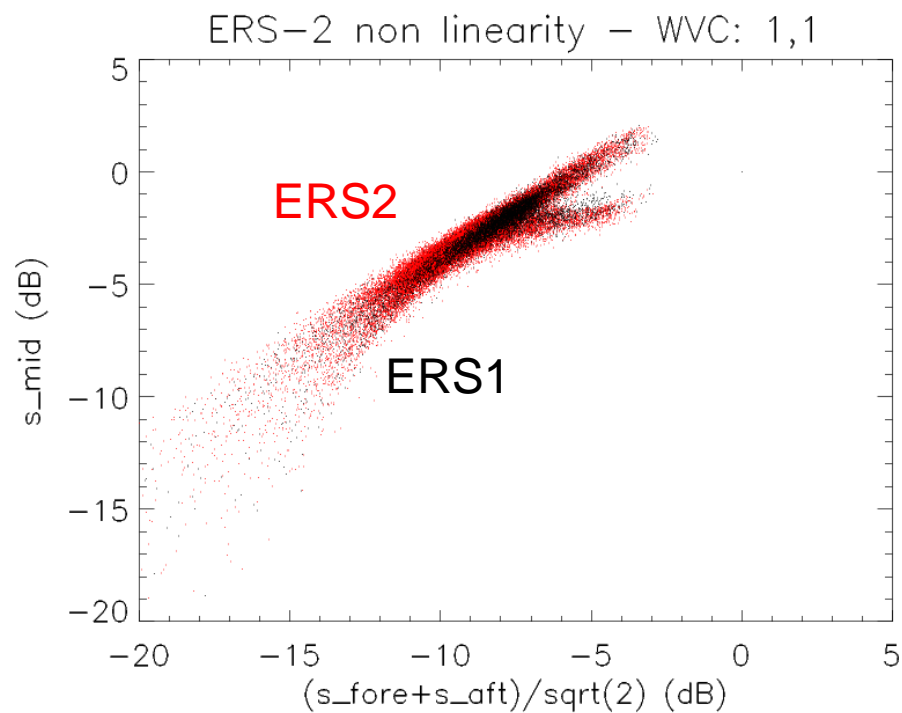
Good agreement at high backscatter



Poor agreement at low backscatter values

- Difference increase with decreasing backscatter

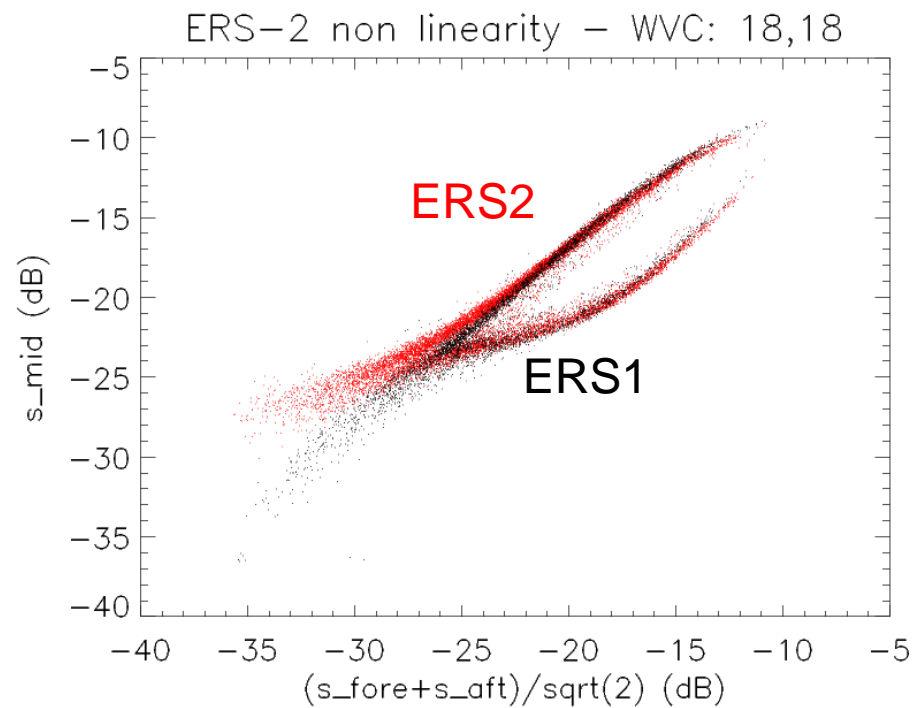
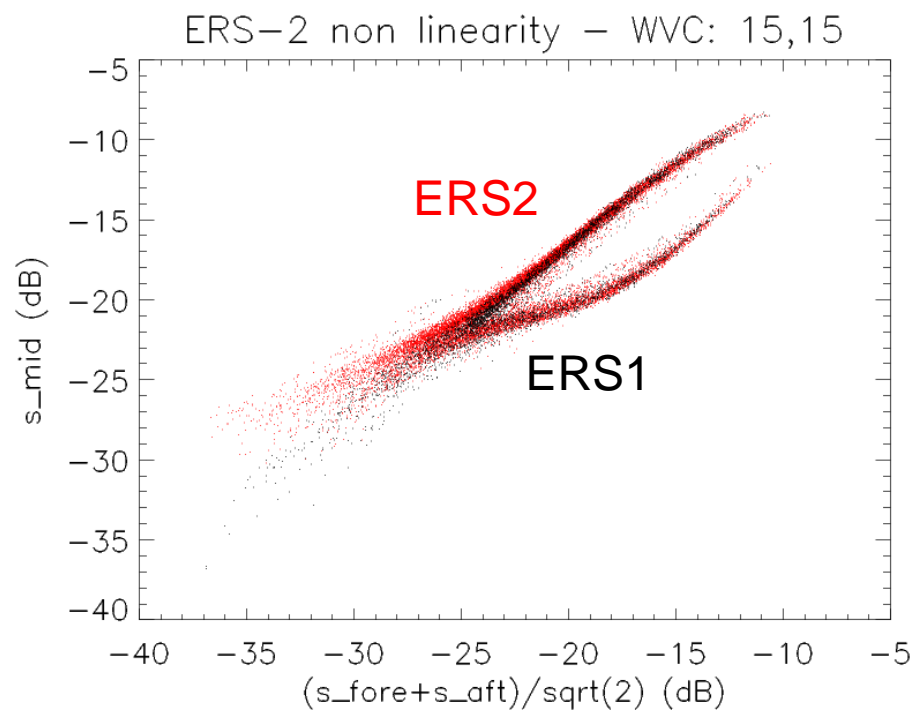
22-Oct-2014



Very good agreement at high backscatter

- ERS1 & ERS2 from KNMI => probably original UWI data (1996)

22-Oct-2014



Difference at low backscatterig

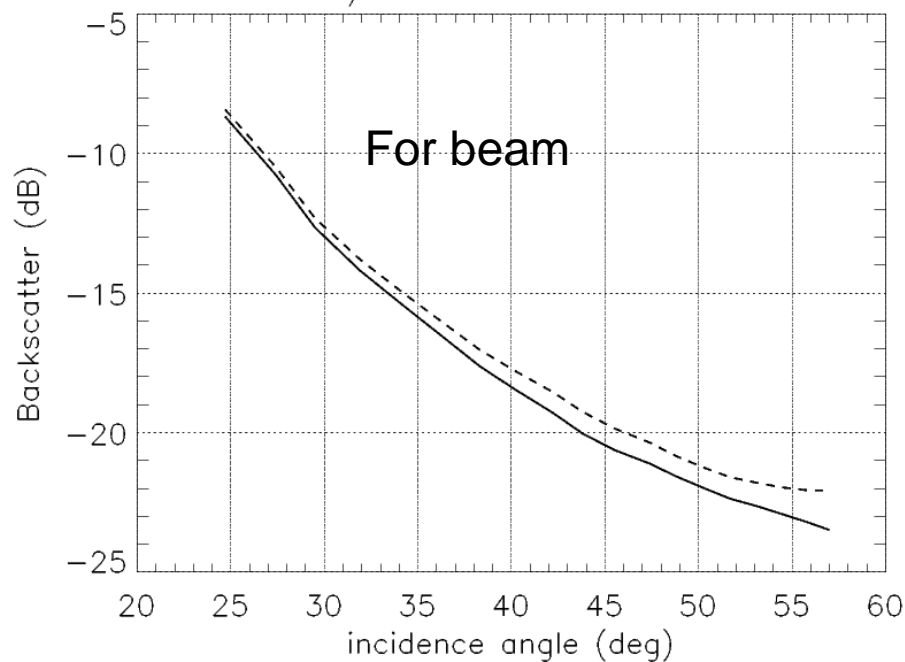
- ERS1 & ERS2 from KNMI => probably original UWI data (1996)

22-Oct-2014

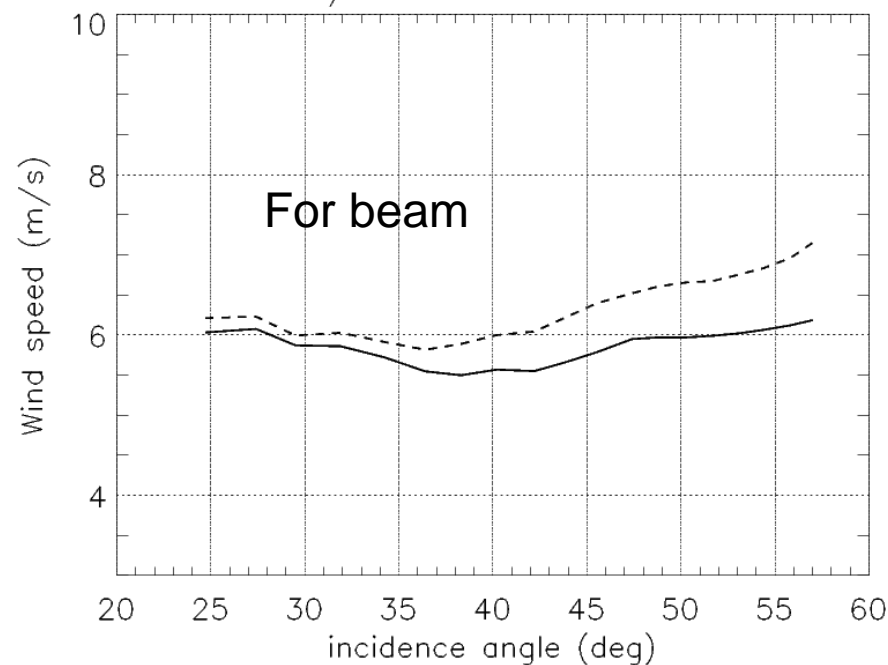
Effect of noise subtraction

Solid line: with noise subtraction; dashed line: no noise subtraction

ERS-2/AMI Noise subtraction



ERS-2/AMI Noise subtraction

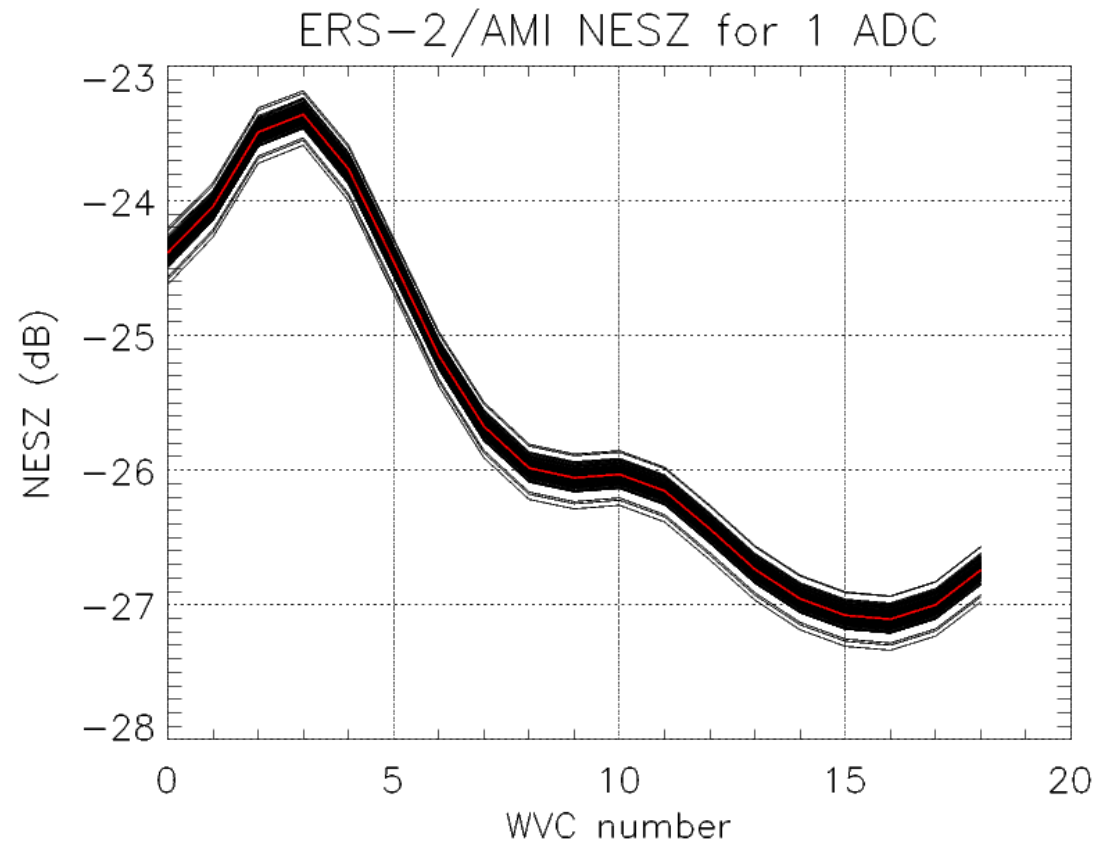


Impact of noise subtraction increase with increasing incidence angle (decreasing sigma)

- At high incidence angle: bias = 1.4 dB / 1.2 m/s

22-Oct-2014

NESZ for 1 ADC





Summary

- Non linear effect increases with decreasing backscatter
 - The difference with ASCAT increases at low backscatter
- Comparison with ERS1
 - Non linear effect also present
 - On UWI data

22-Oct-2014