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**2<sup>nd</sup> URSI Austria Commission Member Meeting**

**URSI Commission F**  
**Wave Propagation & Remote Sensing**

**Dipl.-Ing. Dr. Michael Schönhuber**  
**JOANNEUM RESEARCH**  
**DIGITAL – Space and Acoustics**

June 27, 2013  
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Technische Universität Graz, Inffeldgasse 12, A-8010 Graz

## **RÜCKBLICK** seit 1<sup>st</sup> URSI Austria Commission Member Meeting (12.12.2011)

- No. 4000103480 . . . . „Multimedia and Navigation Test-bed Vehicle”  
**Beginn Garantiephase 1. Mai 2013**
- No. 22707/09/NL/IA . . “Characterisation of Interference in S- and C-Band”  
**erfolgreich abgeschlossen**
- No. 22354/09/NL/LvH . “KA/Q Band Ground Propagation Terminals for the  
Alphasat TDP5 Scientific Experiment”  
**Abschluß ca. September erwartet**
- No. 21992/08/NL/US . . “Feasibility Assessment of Optical Technologies &  
Techniques for Reliable High Capacity Feeder Links”  
**erfolgreich abgeschlossen**
- No. 20985/07/NL/DS . . ”Assessment of the C-Band Satellite-to-Indoor  
Propagation and Shadowing by Vegetation”  
**erfolgreich abgeschlossen**
- No. 20871/07/NL/GLC “Propagation Effects for Mobile Multimedia Services”  
**erfolgreich abgeschlossen - Konferenzpreis**

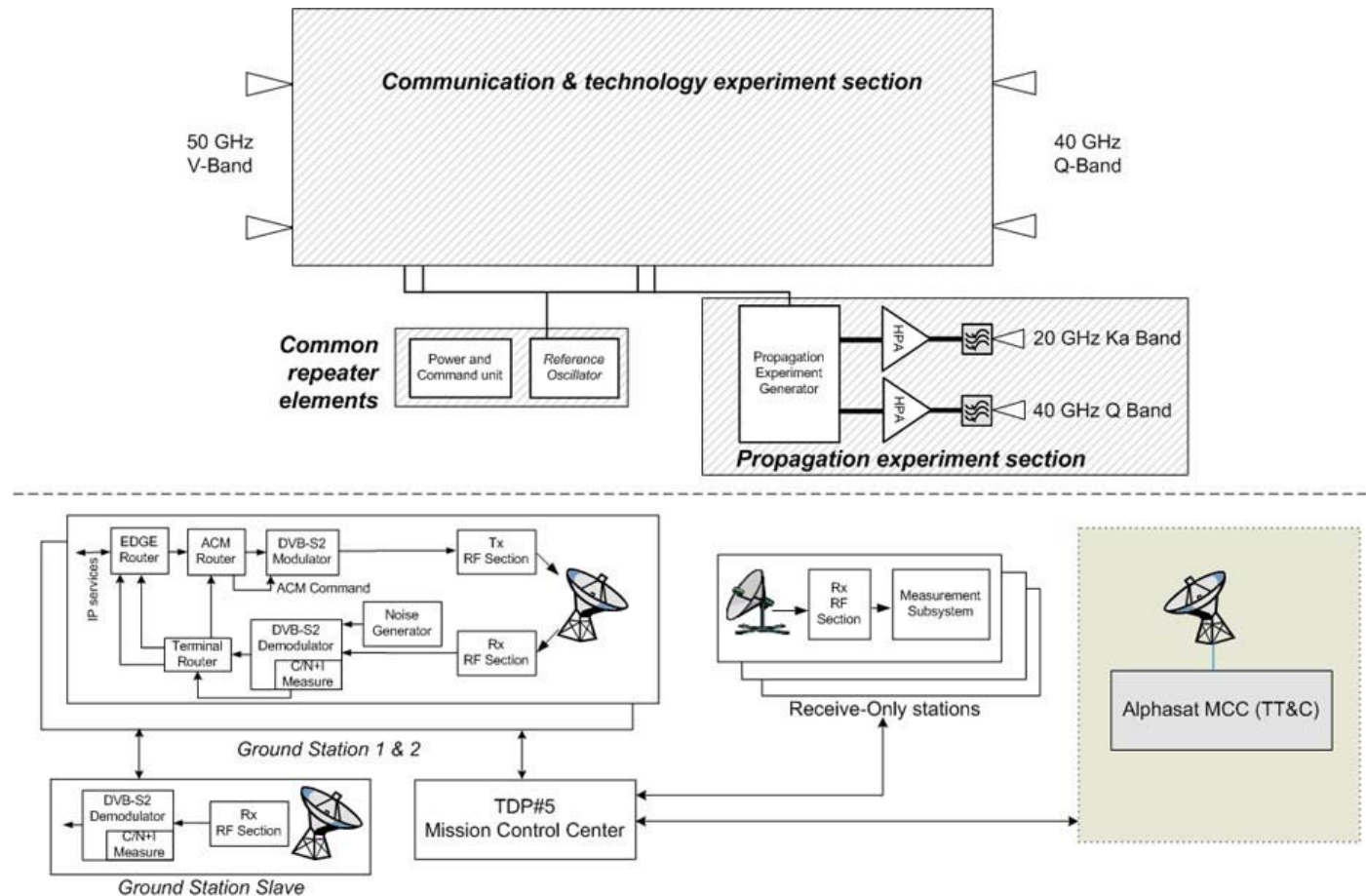
## **Aktuelle Wellenausbreitungsexperimente und Trends insbesondere mit Satellitenbezug:**

- **Höhere Frequenzen und größere Bandbreiten**
- **Antenna Diversity und MIMO**
- **Untersuchungen zur Ausbreitungsverzögerung**

## **Experimente:**

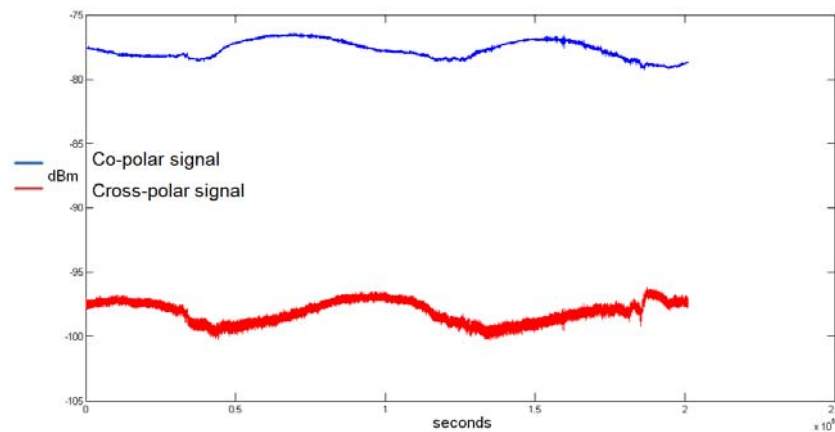
- **KA/Q Band Ground Propagation Terminals for the Alphasat TDP5 Scientific Experiment**
- **Measurement and assessment of second order statistics of Ka band SatCom systems in tropical regions**
- **Aeronautical Satellite Communications Channel**
- **Advantages of C-band and L-band Atmospheric Remote Sensing**

## KA/Q Band Ground Propagation Terminals for the Alphasat TDP5 Scientific Experiment (ESTEC Contract Number 22354/09/NL/LvH)



As of: <http://telecom.esa.int/telecom/www/object/index.cfm?fobjectid=26445>

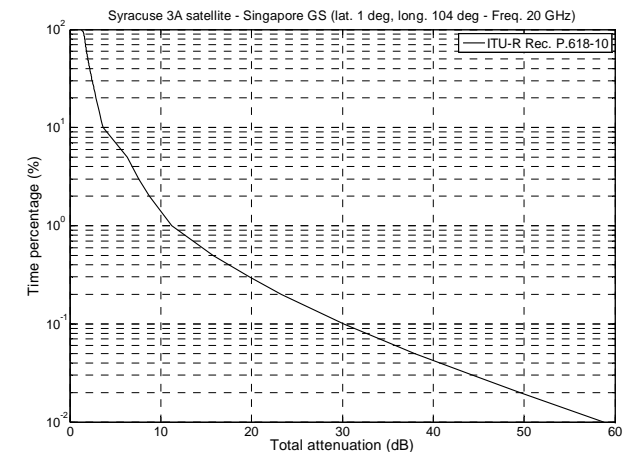
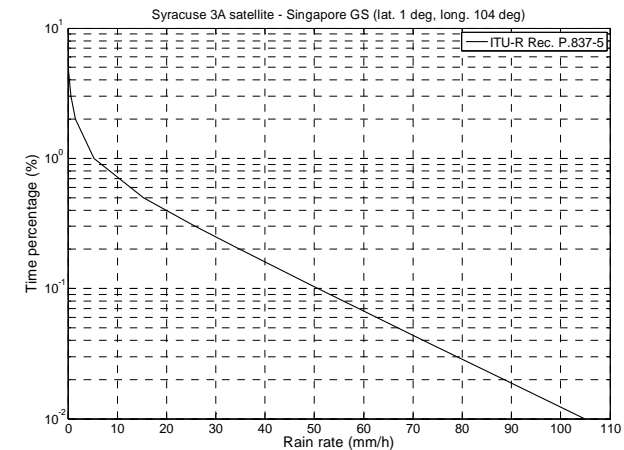
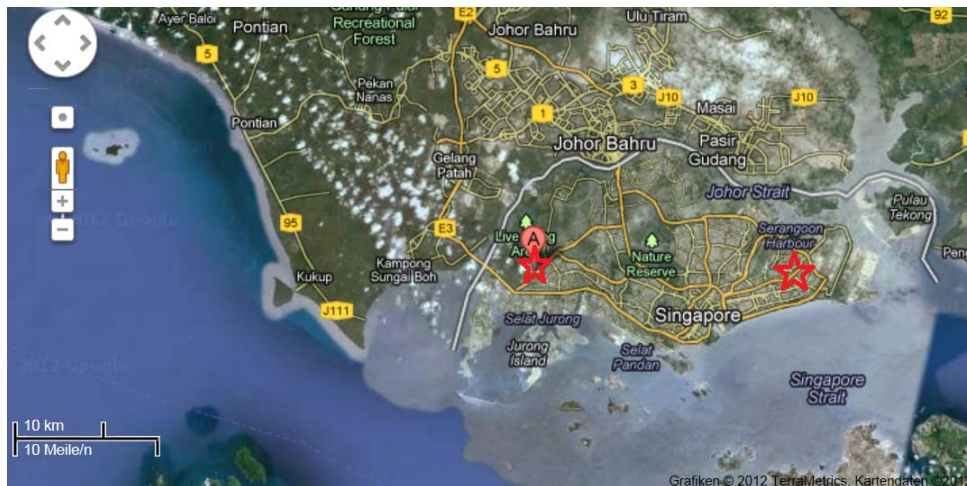
## KA/Q Band Ground Propagation Terminals for the Alphasat TDP5 Scientific Experiment (ESTEC Contract Number 22354/09/NL/LvH)



**Ziel: Kleinserie und Messungen / Statistik in Graz bzw. ITU-R Beiträge**

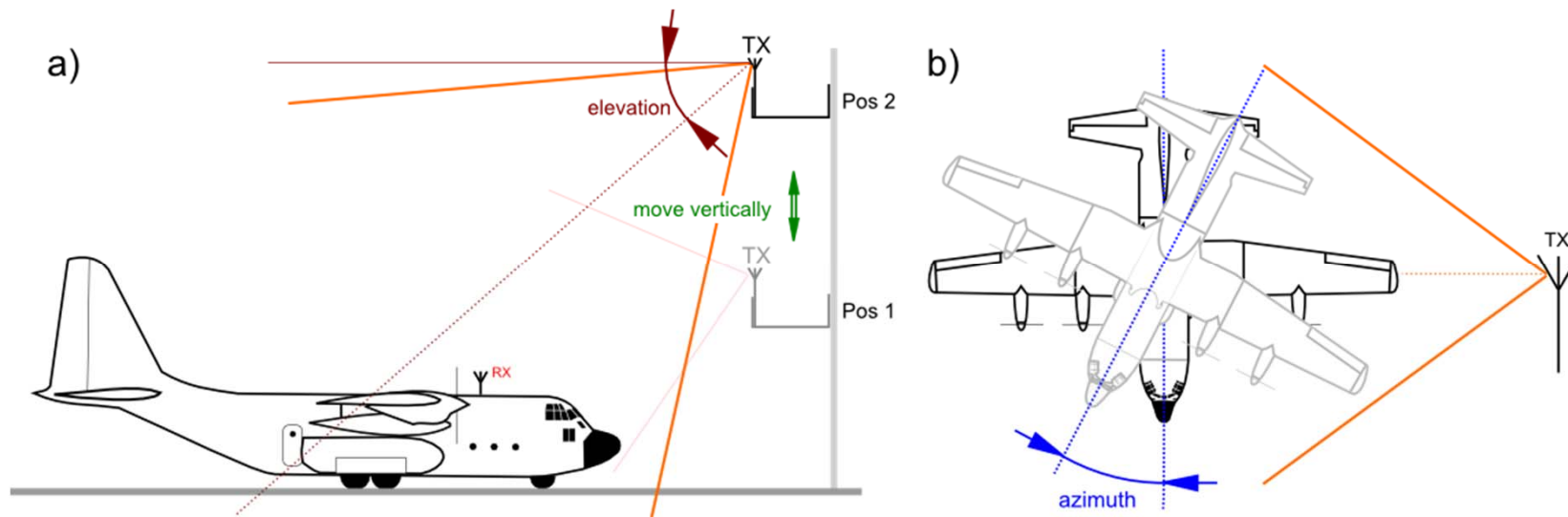
## Measurement and assessment of second order statistics of Ka band SatCom systems in tropical regions

(ESTEC Contract Number 4000106180/12/NL/NR)



**Ziel: Messungen und Datenbasis bzw.  
Beiträge zu ITU-R Recommendations**

## Aeronautical Satellite Communications Channel (ESTEC Contract Number 4000106833/12/NL/CLP)

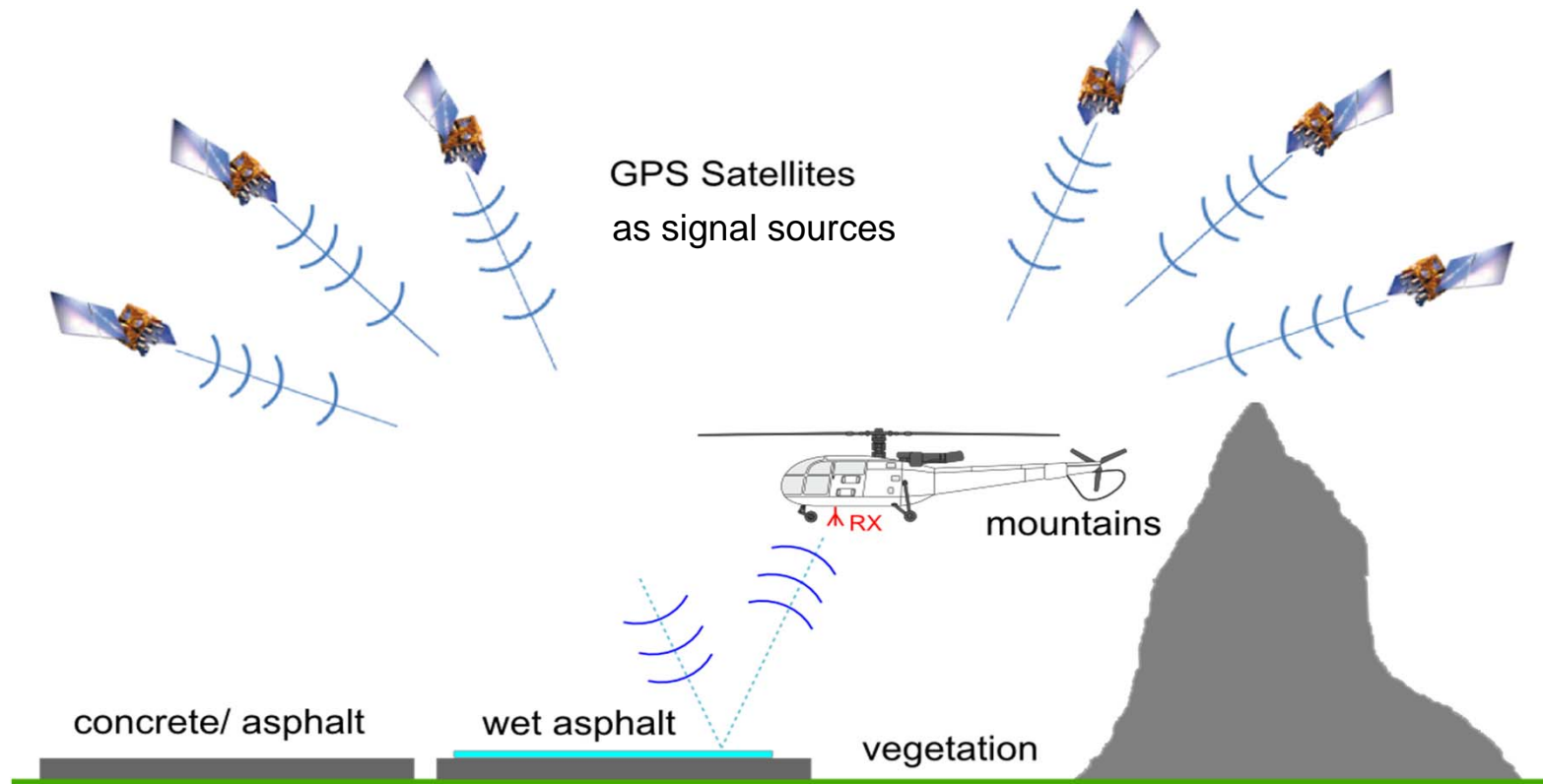


**Ziel: Verifiziertes Funkkanalmodell in L- und Ka-Band**



## Aeronautical Satellite Communications Channel

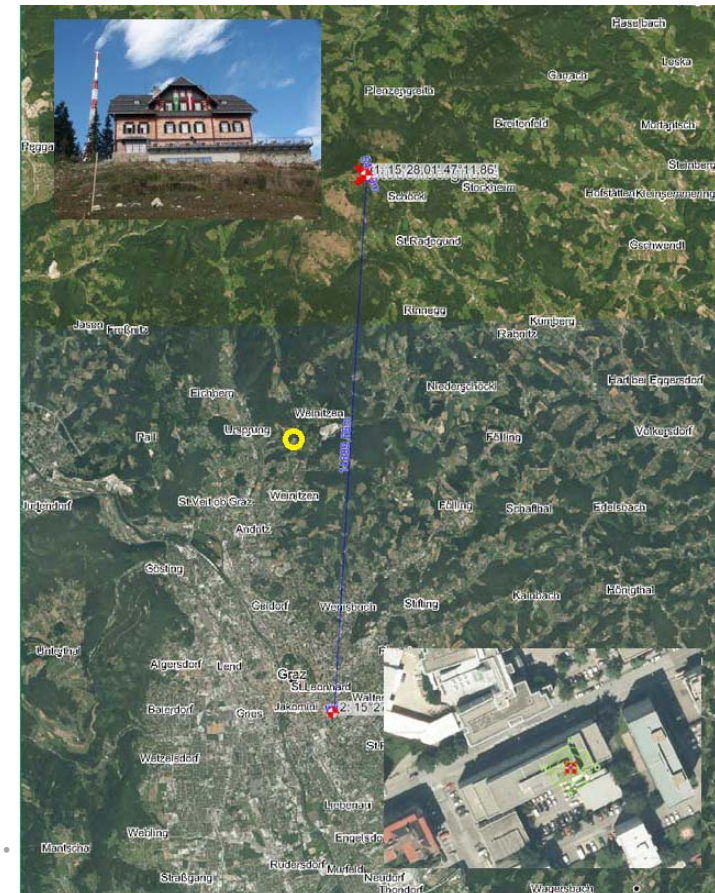
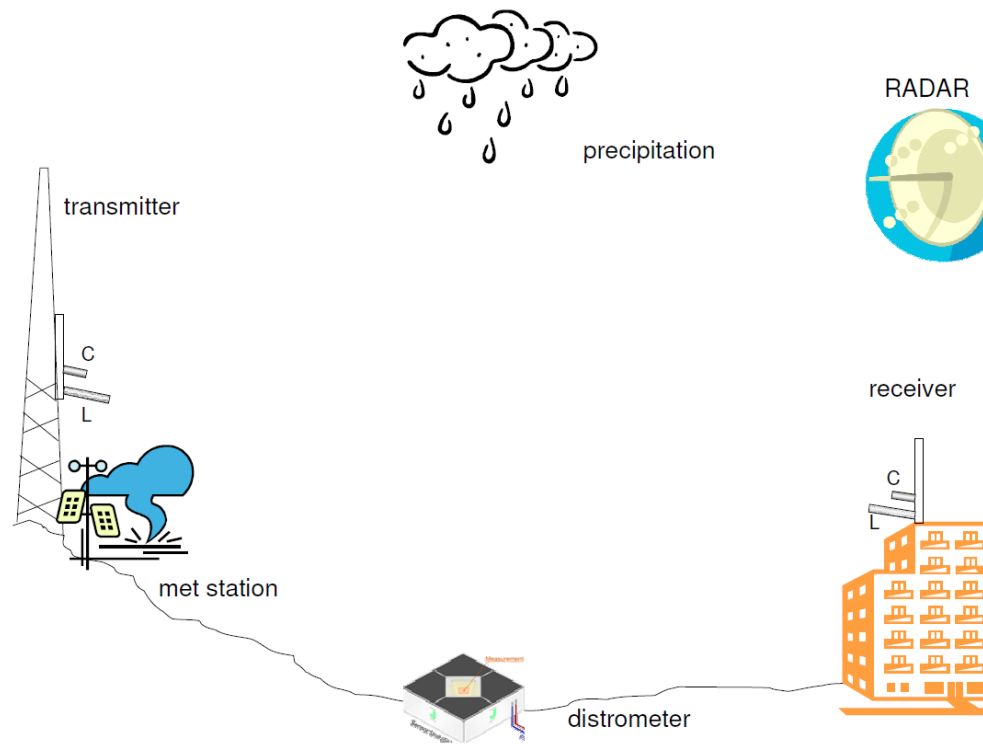
(ESTEC Contract Number 4000106833/12/NL/CLP)



**Ziel: Verifiziertes Funkkanalmodell in L- und Ka-Band**

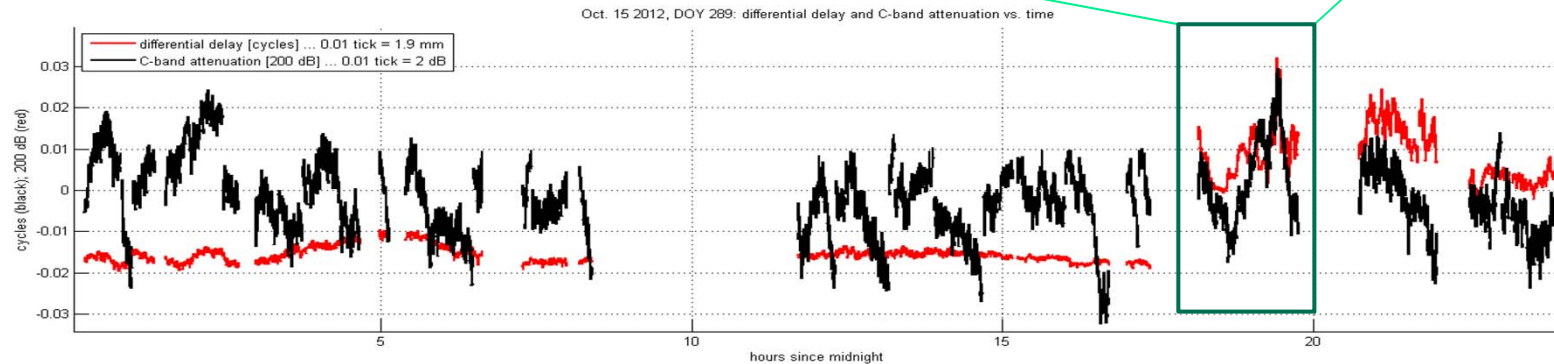
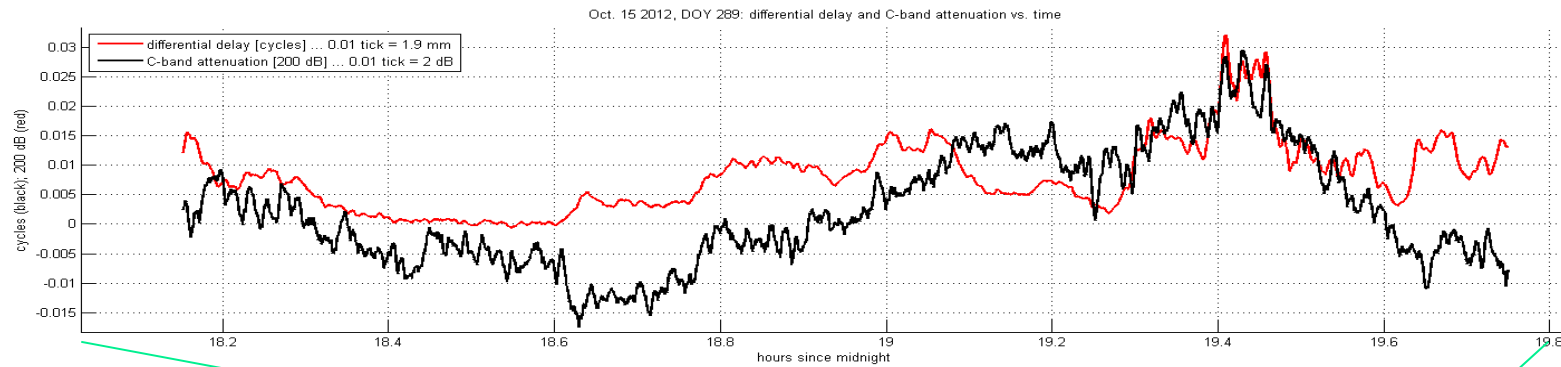
## Advantages of C-band and L-band Atmospheric Remote Sensing

(ESTEC Contract Number 4000103503/2011/NL/WE, JR Subcontractor zu Uni BW b/ München)



**Ziel: aus Delay auf Atmosphäre schließen**

## Advantages of C-band and L-band Atmospheric Remote Sensing



**Ziel: aus Delay auf Atmosphäre schließen**

## **LAUFENDE AKTIVITÄEN** per 27.6.2013

- No. 40000107097 . . . “Weak GNSS Navigation Signal on the Moon”**
- No. 4000106833 . . . “Aeronautical Satellite Communications Channel Characteristics”**
- No. 4000106180 . . . “Measurement and assessment of second order statistics Of Ka band SatCom systems in tropical regions”**
- No. 4000103480 . . . „Multimedia and Navigation Test-bed Vehicle”**
- No. 4000100653 . . . “Design and Development of Advanced Antenna & Receiver for GNSS Reference Stations”**
- No. 22354 . . . . . “KA/Q Band Ground Propagation Terminals for the Alphasat TDP5 Scientific Experiment”**