



ESA - MOST Dragon 2 Programme

2011 DRAGON 2 SYMPOSIUM

中国科技部-欧洲空间局合作“龙计划”二期

“龙计划”二期2011年学术研讨会

Project Summary

id. 5297 Topographic Measurement

2011-06-24

European Partners

- Prof. Fabio Rocca (PI)
- Dr. Daniele Perissin (Co-PI)
*Dipartimento di Elettronica ed Informazione
Politecnico di Milano (POLIMI), Italy*
- Young scientists in Milan:
Mr. Guido Gatti, Research Assistant, POLIMI

Chinese Partners

- Prof. Deren LI (PI)
Prof. Mingsheng LIAO (Co-PI), LIESMARS, Wuhan University
- Mr. Hanmei WANG, Shanghai Institute of Geology Survey
- Young scientists in Wuhan and Shanghai:
 - Dr. Lu Zhang, Asso. Prof. , LIESMARS, Wuhan University
 - Dr. Timo Balz, Post Dr. Fellow , LIESMARS, Wuhan University
 - Ms. Yuanyuan Pei, Ph. D student of LIESMARS, Wuhan University
 - Mr. Houjun Jiang, Ph. D student of LIESMARS, Wuhan University
 - Ms. Lianhuan Wei, MSc student of LIESMARS, Wuhan University
 - Mr. Zhilei Fang, Engineer, Shanghai Institute of Geology Survey

Young Scientists' Activities

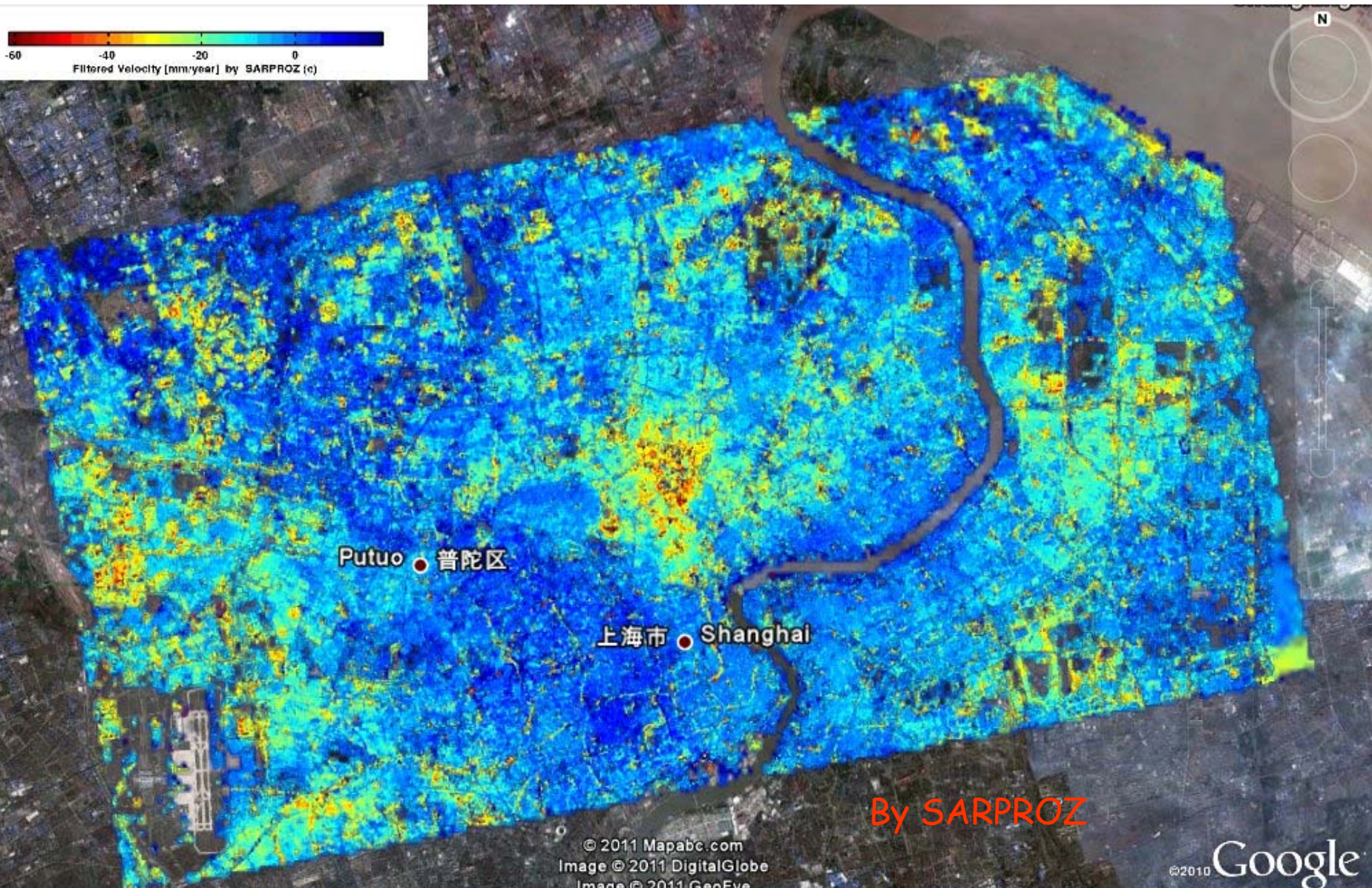
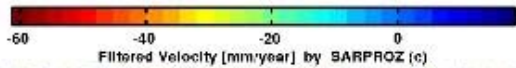
- Young scientist team of LIESMARS had a meeting with Prof. Fabio Rocca in Beijing, during the Advanced SAR Conference, April 2011.
- Young scientist, Dr. Lu ZHANG, studied in ESRIN for 6-month training and research program

Presented report for ESRIN and published paper in ISPRS Journal.

Young Scientists' Activities

- **One PhD student participated the Training Course of Land Remote Sensing in Lanzhou.**
- **The PhD student of the joined program, Teng WANG, has completed his thesis defense in WHU and POLIMI, June 2010.**

Subsidence monitoring with COSMO SkyMed over Shanghai

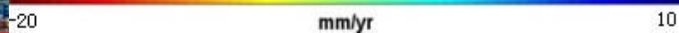
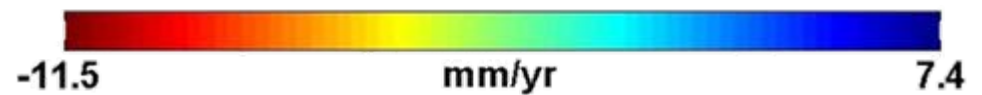
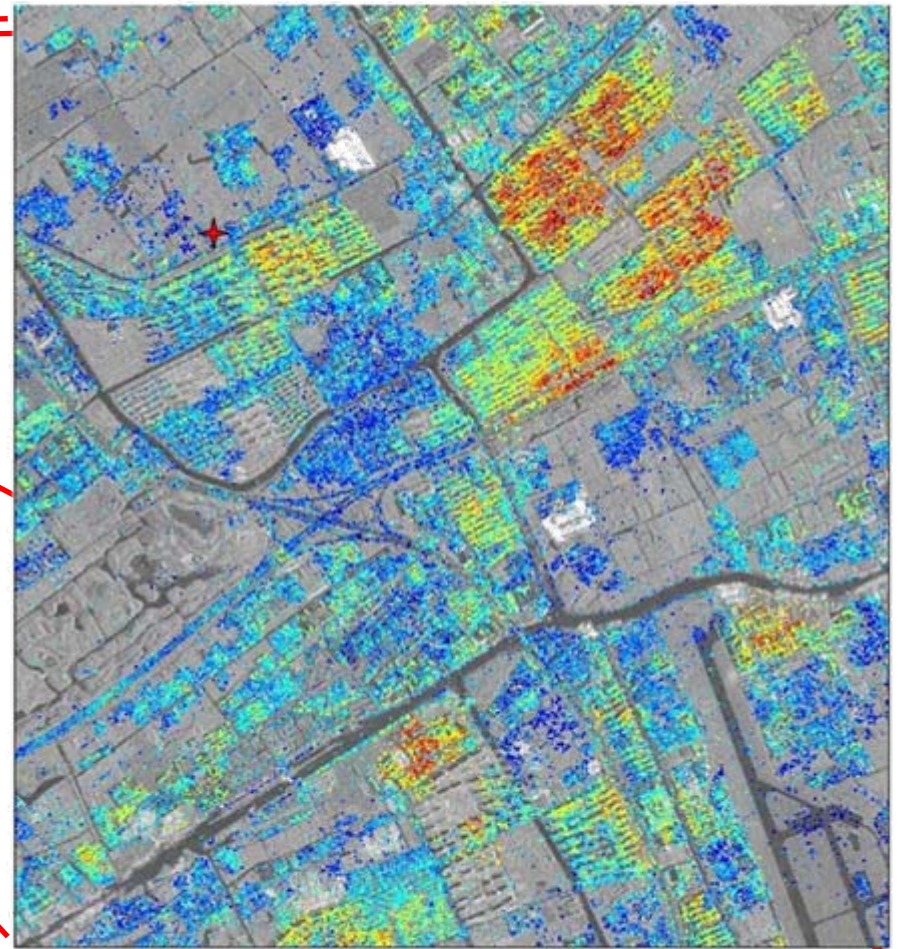
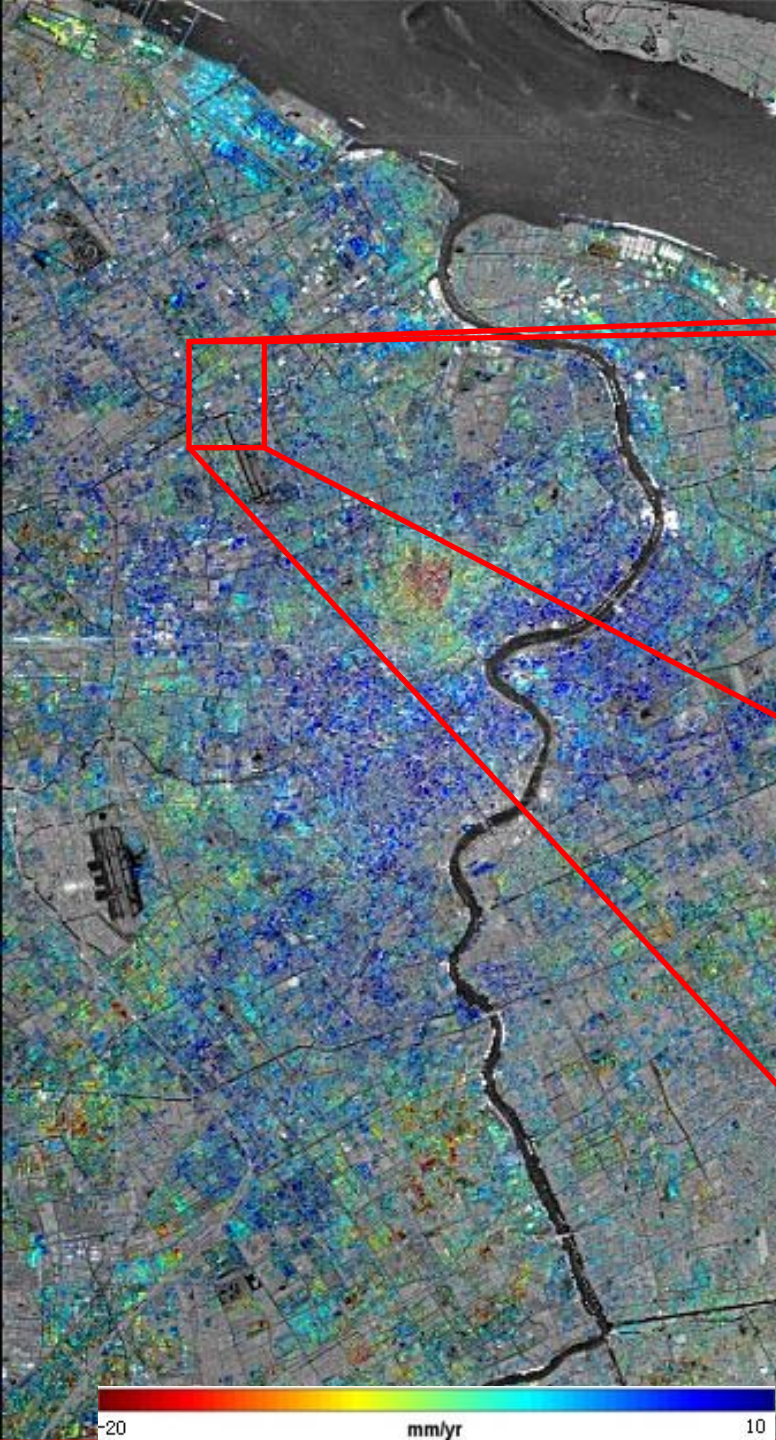


By SARPROZ

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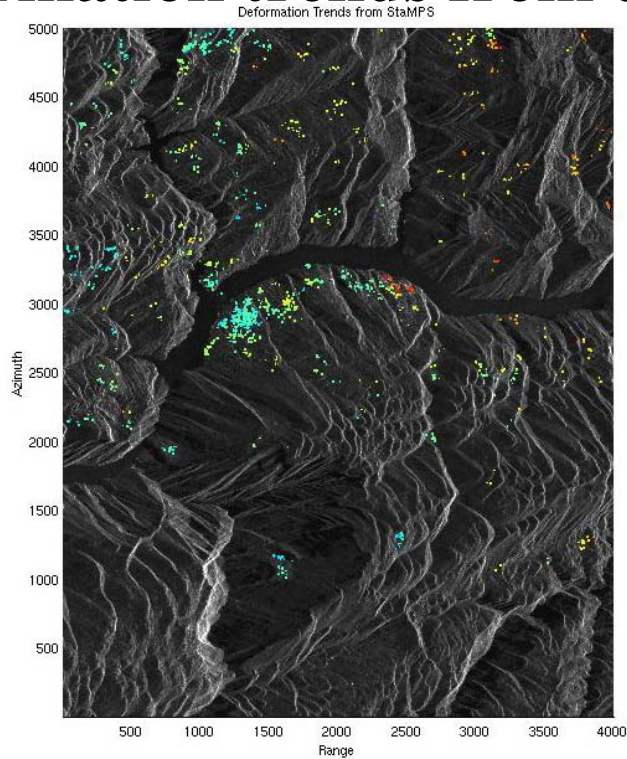
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Subsidence monitoring with TerraSAR-X over Shanghai

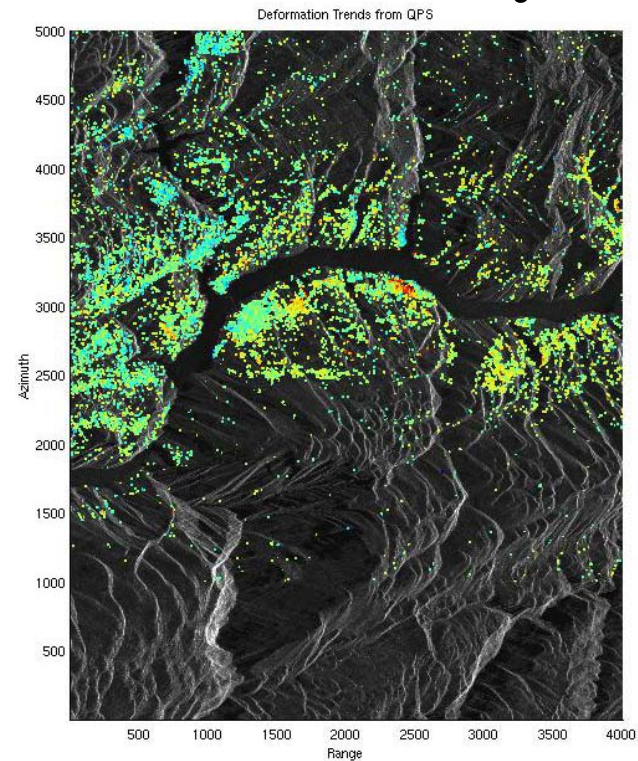


Time series InSAR analysis over Badong Town

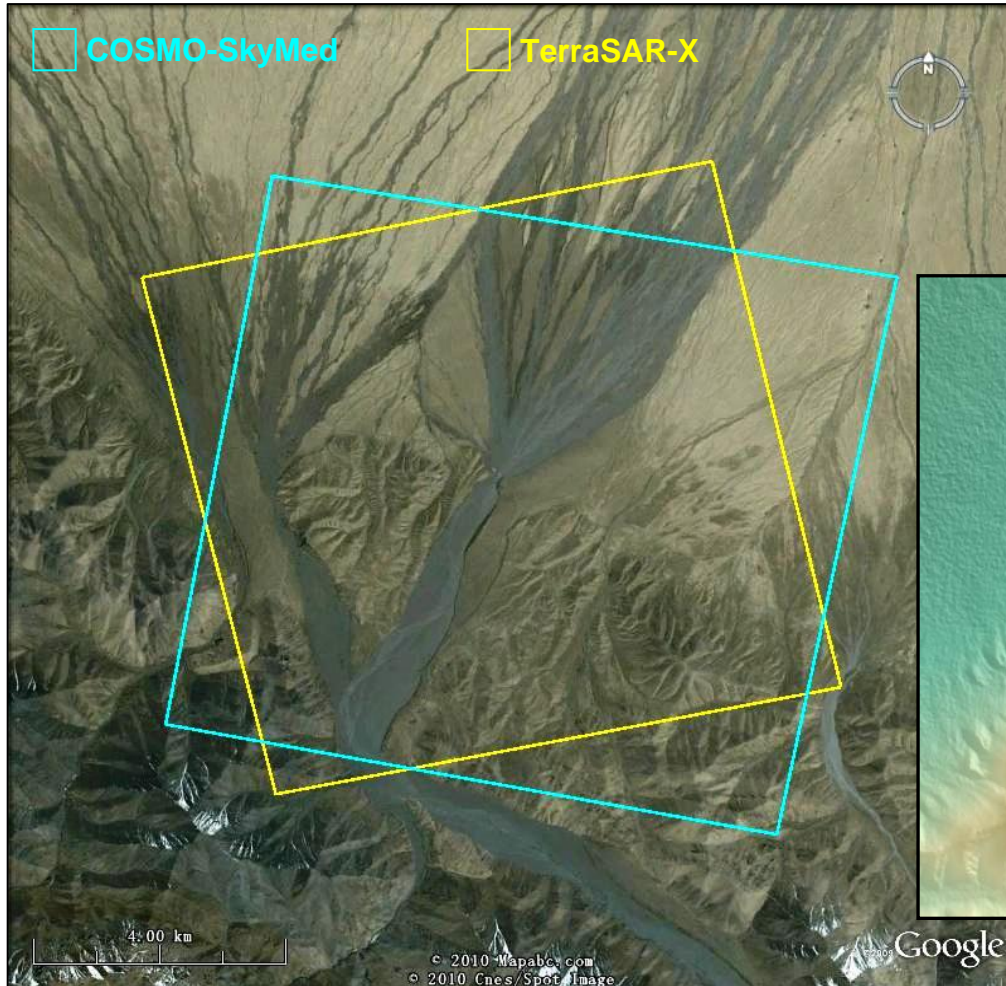
Deformation trends from different time-series analysis methods



StaMPS



QPS



DEM extraction from X-band CSKS and TSX data



Recent Publications

BOOK:

- **Time Series InSAR Analysis over the Three Gorges Region Techniques and Applications**, *Teng Wang, Mingsheng Liao and Fabio Rocca* , VDM Verlag Publishing, Germany, September , 2010.

JOURNAL PAPERS:

- **Landslide Monitoring with High-Resolution SAR Data in the Three Gorges Area**, *Mingsheng Liao, Jin Tang, Teng Wang, Timo Balz, Lu Zhang*, => *Science in China*, accepted.
- **Monitoring the stability of Three Gorges Dam with time-series technique**, *Teng Wang, M. Liao, D. Perissin, and F. Rocca* => *Science in China*, May, No. 5, 2011.
- **Rational function modeling for spaceborne SAR datasets**, *Lu Zhang , Xueyan He, Timo Balz, Xiaohong Wei and Mingsheng Liao*, => *ISPRS Journal of Photogrammetry and Remote Sensing*, Vol. 66, No. 1, 2011
- **Time Series InSAR Applications Over Urban Areas in China**, *Daniele Perissin and Teng Wang*
=> *IEEE Journal of Selected Topics in Earth Observations and Remote Sensing*, 2011.

Project Planning – 2011 and 2012

- On the base of the fruitful results from DRAGON-1, the same research team focused on the development of operational PS-InSAR techniques for monitoring land deformation, such as landslides and urban subsidence.
- Multi-frequency SAR data sets will be used for future research on InSAR/PS-InSAR. TPM data, such as TerraSAR-X, COSMO-SkyMed and ALOS/PALSAR, has been collected in Shanghai, Three Gorges, Taishan, Ganshu, etc. The investigation will be continued.