



Deliverable 2.4: 4 peer-reviewed publications

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Lead beneficiary for this deliverable:	KO
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Authors:	Brajša, R., Jurdana-Šepić, R., Poljančič, I., Ruždjak, V. (HVAR), Baranyi, T., Győri, L., Ludmány, A., Muraközy, J. (KO), Valori, G., Török, T., P. Démoulin, L. van Driel-Gesztelyi, (OBSPARIS), Lefèvre, L., Clette, F., (ROB), Hanslmeier, A. (UNIGRAZ), Mursula, K. (UOulu),
Quality reviewer:	

Project co-funded by the European Commission within the Seventh Framework Programme (2007)		
Dissemination level		
PU	Public	PU
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	



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Report on the publications relevant to photosphere

Type of the deliverable: Journal papers

Aim of the deliverable: utilization of photospheric data in solar and space weather analyses. Participants: KO, UOulu, ROB, HVAR, UNIGRAZ, OBSPARIS.

The proposal formulated those scientific topics which can be studied in the frame of the given cooperation and by using the available photospheric data. These issues are cited from the Annex below and the corresponding publications are listed. Authors participating in SOTERIA are indicated with boldface letters, the involved institutes are in brackets.

- "Study of the so-called active longitudes based on the new sunspot data and their relationships with the heliospheric anisotropy along with their temporal variations."

Relevant peer-reviewed papers:

1. Zhang, L., **K. Mursula**, I. Usoskin, and H. Wang, 2011, Global analysis of active longitudes of sunspots, *Astron. Astrophys.*, 529, A23, 9 pages, doi: 10.1051/0004-6361/201015255. (**UOulu**)

2. L. Zhang, **K. Mursula**, I. Usoskin and H. Wang, 2011, Global analysis of active longitudes of solar X-ray flares, *J. Atm. Solar-Terr. Phys.*, 73, pp. 258-263, doi:10.1016/j.jastp.2009.12.003. (**UOulu**)

- "Investigation of the solar rotation and related phenomena by comparing the sunspot rotation with the rotation of coronal bright points traced in SOHO-EIT 28.4 nm images measured by automatic and an interactive method."

Relevant peer-reviewed papers:

3. Wöhl, H., **Brajša, R., Hanslmeier, A.**, Gissot, S.F., 2010, A precise measurements of the solar differential rotation by tracing small bright coronal structures in SOHO-EIT images: Results and comparisons for the period 1998-2006, *Astron.Astrophys.* 520, 29. (**HVAR, UNIGRAZ**)

4. **Jurdana-Šepić, R., Brajša, R.,** Wöhl, H., **Hanslmeier, A., Poljančič, I.,** Svalgaard, L., Gissot, S.F., 2011, A relationship between the solar rotation and activity in the period 1998 - 2006 analyzed by tracing small bright coronal structures in SOHO-EIT images, *Astron.Astrophys.* 534, 17. (**HVAR, UNIGRAZ**)

- "Study of magnetic flux emergence by detailed monitoring of individual active regions and their temporal evolution: area, morphology, internal motions and rotation rate, etc."

Relevant peer-reviewed papers:

5. **Valori, G.,** Kliem, B., **Török, T.,** Titov, V.S., 2010, Testing magnetofrictional extrapolation with the Titov-Démoulin model of solar active regions, *Astron.Astrophys.*, 519, 44. (**OBSPARIS**)



6. M.L. Luoni, **P. Démoulin**, C.H. Mandrini, **L. van Driel-Gesztelyi**, 2011, Twisted Flux Tube Emergence Evidenced in Longitudinal Magnetograms: Magnetic Tongues
Sol. Phys. 270. 45. **(OBSPARIS)**

- Extension of standard photospheric indicators backwards in time, recovery from images/photographic archives of unexploited information leading to present an future standard indices (e.g. hemispheric sunspot numbers, facular index).

Relevant peer-reviewed paper:

7. **Clette, F.**, 2011, Past and future sunspot indices: New goals for SoTerIA,
Journal of Atmospheric and Solar-Terrestrial Physics, 73, 182. **(ROB)**

- "Investigation of the long-term solar activity variations using proxies based on C-14 and Be-10 data"

Relevant peer-reviewed paper:

8. **Hanslmeier, A., Brajša, R.**, 2010, The chaotic solar cycle: I. Analysis of cosmogenic 14-C-data,
Astron.Astrophys., 509, A5. **(UNIGRAZ, HVAR)**

The above seven peer-reviewed papers have been published until the final report in printed form. The proposed deliverable (four peer-reviewed papers) has been produced.

The publication activity, however, was more intense than that. We list below further publications acknowledging the SOTERIA-support.

The following peer-reviewed papers are waiting for publication in photospheric thematics.

Valori, G., L.M. Green, P. Démoulin, S. Vargas Dominguez, L. van Driel-Gesztelyi, A. Wallace, D. Baker, M. Fuhrmann: 2011, Nonlinear Force-Free Extrapolation of Emerging Flux with a Global Twist and Serpentine Fine Structures,
Solar Phys., in press, DOI: 10.1007/s11207-011-9865-8 **(OBSPARIS)**

S. Vargas Dominguez, D. MacTaggart, L. Green, **L. van Driel-Gesztelyi**, A.W. Hood, 2011, On Signatures of Twisted Magnetic Flux Tube Emergence
Solar Phys. 2011, in press, DOI 10.1007/s11207-011-9789-3 **(OBSPARIS)**

L.K. Harra, V. Archontis, E. Pedram, A.W. Hood, D.L. Shelton, **L. van Driel-Gesztelyi**
The Creation of Outflowing Plasma in the Corona at Emerging Flux Regions:
Comparing Observations and Simulations
Solar Phys. In press, DOI: 10.1007/s11207-011-9855-x **(OBSPARIS)**

Muraközy, J., Ludmány, A., 2011, Phase-lags of solar hemispheric cycles,
Astron.Astrophys. accepted for publication. **(KO)**

Hanslmeier A., Brajša R., Steinhilber, F., Calogovic, J.: The chaotic solar cycle: II
Analysis of cosmogenic 10-Be -data,
Astron.Astrophys., submitted. **(UNIGRAZ, HVAR)**

Lefèvre, L. Clette, F., A global small-sunspot deficit at the base of the index anomalies of solar cycle 23,
Astron.Astrophys. Letter to the Editor, submitted (09/2011).



Peer-reviewed publications in conference proceedings:

Muraközy, J., Ludmány, A., 2010, North-south differences of solar cycles,
Cent. Eur. Astrophys.Bull., 34, 99. (KO)

Hanslmeier, A., Brajša, R., 2010, Solar activity proxies, geomagnetic variations,
Cent. Eur. Astrophys.Bull., 34, 109. (HVAR, UNIGRAZ)

Muraközy, J., Ludmány, A., 2011, Considerations on the Spörer-diagram - Torsional
Wave Relationship,
Cent. Eur. Astrophys.Bull., 35, 45. (KO)

Poljančič, I., Brajša, R., Hržina, D., Wöhl, H., **Hanslmeier, A.,** Pötzi, W., **Baranyi, T.,**
Özgüç, A., Singh, J., **Ruždjak, V.**, 2011, Differences in Heliographic Positions and
Rotation Velocities of Sunspot Groups from Various Observatories,
Cent. Eur. Astrophys.Bull., 35, 59. (HVAR, UNIGRAZ, KO)

Other conference proceedings:

Lefèvre, L., Clette, F., Baranyi, T., 2011, In-depth survey of sunspot and active region
catalogs, *IAU Symp. 273.*, 221. (ROB, KO)

Győri, L., Baranyi, T., Ludmány, A., 2011, Photospheric data programs at the
Debrecen Observatory,
IAU Symp. 273., 403. (KO)

Muraközy, J., Ludmány, A., Correlations of magnetic features and the torsional
pattern
IAU Symp. 273., 393. (KO)

