

Solar magnetism and dynamics and THEMIS users meeting

Meudon, November 15-17, 2006

editors: V. Bommier and S. Sahal-Bréchet

TABLE OF CONTENTS

<i>Foreword</i>	8
<i>List of Participants</i>	10
Session 1: THEMIS	
B.F. Gelly <i>THEMIS: the 2006-2012 perspective</i>	13
V. Bommier <i>Some THEMIS tip-tilt images</i>	23
A. López Ariste <i>THEMIS observational hits in 2006</i>	27
Session 2: The quiet Sun	
G. Tsiropoula and K. Tziotziou <i>The fine-scale structure of the quiet solar chromosphere</i>	32
M. Bianda, R. Ramelli, and J.O. Stenflo <i>Variation of the second solar spectrum with the solar cycle</i>	38
A. Asensio Ramos and J. Trujillo Bueno <i>THEMIS observations of the Hanle effect in C₂ lines</i>	42
C. Grec, C. Aime, M. Faurobert, G. Ricort, and F. Paletou <i>Contrast inversion in the 557.6 nm line detected with differential speckle interferometry</i>	48
J.C. Ramírez Vélez <i>Magnetic strength analysis in the quiet Sun regions using the Mn I line at 553 nm</i>	54

M. J. Martínez González <i>Internetwork magnetic fields observed in the visible</i>	59
V. Bommier, G. Molodij, and N. Meunier <i>The granular magnetic field as observed with THEMIS</i>	65
R. Muller, A. Hanslmeier, and M. Saldaña-Muñoz <i>Space and time variation of the solar granulation</i>	71
Session 3: The active Sun and the network	
Z. Xu and J.C. Héroux <i>Multi-wavelength analysis of the impact polarization of 2001 June 15th solar flare</i>	77
J. Štěpán <i>Polarization diagnostics of proton beams in solar flares</i>	83
J. Arnaud, S.V. Berdyugina, D.M. Fluri, and N. Afram <i>Spectro-polarimetry of a sunspot simultaneously in atomic and molecular lines</i>	89
P. Mein, N. Mein, M. Faurobert, G. Aulanier, and J.-M. Malherbe <i>Magnetic flux tubes observed with THEMIS/MSDP</i>	92
K. Tziotziou, G. Tsiropoula, N. Mein, and P. Mein <i>Dual-line analysis of sunspot oscillations</i>	98
Session 4: Filaments, prominences and corona	
J. Arnaud, M. Faurobert, and E. Fossat <i>Dome C: An exceptional site for solar observations</i>	105
G. Stellmacher, E. Wiehr, and J. Hirzberger <i>Two-dimensional imaging of the He D₃/Hβ emission ratio in quiescent solar prominences</i>	108
S. Rondi, Th. Roudier, G. Molodij, V. Bommier, J.M. Malherbe, B. Schmieder, N. Meunier, M. Rieutord, and F. Beigbeder <i>Photospheric flows around a quiescent filament and CALAS first results</i>	114
M. Kramar and B. Inhester <i>Inversion of coronal Zeeman and Hanle observations to reconstruct the coronal magnetic field</i>	120
Session 5: Theory, extrapolation and simulation	
S. Régnier <i>Nonlinear force-free field extrapolation: numerical methods and applications</i>	126
P. Démoulin and E. Pariat <i>Computing magnetic energy and helicity fluxes from series of magnetograms</i>	136

- H. Frisch, M. Sampurna, and K. N. Nagendra
Turbulent magnetic field averages for the Zeeman effect 142

Session 6: Polarimetric analysis & inversion methods: available tools

- B. Lites, R. Casini, J. Garcia, H. Socas-Navarro
A suite of community tools for spectro-polarimetric analysis 148
- A. Sainz Dalda and A. López Ariste
Using reduction and inversion tools for THEMIS-MTR data: chromospheric reversals of a moving magnetic feature and an ephemeral region 154
- P. Mein, N. Mein, and V. Bommier
Fast vector magnetic maps with imaging spectroscopy 160
- E. Khomenko and M. Collados
Magnetic field inversions from Stokes profiles generated by MHD simulations 166

Session 7: Openings on the future

- N. Meunier, M. Lafon, P. Maeght, F. Grimaud, and Th. Roudier
BASS2000-Tarbes : current status and THEMIS data processing 172
- J.O. Stenflo
Solar polarimetry with ZIMPOL 181
- B. Schmieder
New results and future perspectives of THEMIS 191

POSTERS

- S. Sahal-Bréchet, M. Derouich, V. Bommier, and P. S. Barklem
Multipole rates for atomic polarization studies: the case of complex atoms in non-spherically symmetric states colliding with atomic hydrogen 197
- J.-M. Malherbe, Th. Roudier, J. Moity, P. Mein, J. Arnaud, and R. Muller
Spectro polarimetry with liquid crystals 203