

Solar Polarization Workshop 8

Firenze, 12 – 16 September, 2016

Program

MONDAY, September 12

8:00 – 9:00 Registration
9:00 – 9:15 Welcome

SESSION 1
PHYSICS OF POLARIZATION

Chair: R. Manso Sainz

9:15 – 9:50 R. Casini (Review)
Egidio Landi: a life in the science and teaching of polarimetry
9:50 – 10:15 V. Bommier
Non-perturbative theory of radiative scattering in the weak radiation field limit
10:15 – 10:40 J.O. Stenflo
The Kramers-Heisenberg coherency matrix

10:40 – 11:10 COFFEE BREAK

11:10 – 11:35 E. Landi Degl'Innocenti
Relaxation phenomena due to collisions with neutral perturbers in hyperfine structure multiplets
11:35 – 12:00 S. Sahal-Bréchet
Collisional broadening and collisional depolarization of spectral lines: similarities and differences
12:00 – 12:25 H. Frisch
Some analytic results on Rayleigh scattering and resonance polarization
12:25 – 12:50 K. Sowmya
Partial frequency redistribution theory with Paschen-Back effect – application to Li I 6708 Å lines

12:50 – 14:20 LUNCH

14:20 – 14:45 D. Supriya
Effects of lower-level polarization and partial frequency redistribution on Stokes profiles
14:45 – 15:10 J. Mao
Relativistic electrons radiation/polarization in random and small-scale magnetic fields

SESSION 2
MODELING OF POLARIZATION IN THE ATMOSPHERES
OF THE SUN AND OTHER STARS

Chair: Stepan, J.

15:10 – 15:45 J. Trujillo Bueno (Review)
The last twenty years: a review on optically polarized atoms in the solar atmosphere

15:45 – 16:45 POSTER SESSION + COFFEE BREAK

16:45 – 17:10 L. Belluzzi
Modeling the enigmatic scattering polarization signal of the NaI D1 line
17:10 – 17:35 T. del Pino Aleman
A theoretical investigation of the scattering polarization in far ultraviolet lines with different sensitivities to the Hanle effect
17:35 – 18:00 E. Carlin Ramirez
Modelling of chromospheric Hanle and Zeeman polarization in time and space

19:00 WELCOME COCKTAIL

TUESDAY, September 13

- 9:00 – 9:35 K. Nagendra (Review)
Polarized Line Formation: Methods and Solutions
- 9:35 – 10:00 G. Janett
Numerical methods for the formal solution of the radiative transfer equation for polarized light
- 10:00 – 10:25 M. Sampoorna
Comoving Frame Methods for Polarized PRD Line Transfer with Velocity Fields
- 10:25 – 10:50 E. Alsina Ballester
The transfer of resonance line polarization with PRD in the general Hanle-Zeeman regime

10:50 – 11:20 COFFEE BREAK

- 11:20 – 11:45 R. Manso Sainz
Magnetic Field Diagnostics with Strong Chromospheric Lines
- 11:45 – 12:10 N. Kostogryz
Center-to-limb continuum polarization in solar and stellar atmosphere
- 12:10 – 12:35 F. Calvo
Linear polarization of the solar continuum spectrum

SESSION 3

POLARIMETRY AS A DIAGNOSTIC TOOL FOR STELLAR ATMOSPHERES

Chair: Anusha, L.

- 12:35 – 13:00 A. Asensio Ramos
Modern inversion codes for Stokes parameters

13:00 – 14:30 LUNCH

- 14:30 – 14:55 I. Milic
Response function for NLTE lines
- 14:55 – 15:20 N. Raouafi
Diagnostics of Coronal Magnetic Fields Through the Hanle Effect in UV and IR Lines
- 15:20 – 15:45 H. Li
Polarization of coronal forbidden line

15:45 – 16:45 POSTER SESSION + COFFEE BREAK

- 16:45 – 17:10 N. Smitha
Measurement of solar magnetic fields using multi-pair Stokes V line ratios
- 17:10 – 17:35 M.J. Martinez Gonzalez
Measuring the global field of the Sun and other stars with the Hanle effect
- 17:35 – 18:00 C. Scalia
Measuring the effective magnetic field of cold active star Eps Eri using the slope method

WEDNESDAY, September 14

SESSION 4-I
GROUND-BASED POLARIZATION MEASUREMENTS:
OBSERVATIONS, ANALYSIS AND INTERPRETATION

Chair: Asensio Ramos, A.

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- 9:00 – 9:25 J. Haisheng
The results from NST's observation -- Magnetic activities
- 9:25 – 9:50 M. Bianda
Second Solar Spectrum observations with ZIMPOL
- 9:50 – 10:15 J. Jurcak
The intensity and polarization of the Ca II 8542 line in the quiet Sun: spectro-polarimetric observations vs. 3D radiative transfer modelling
- 10:15 – 10:40 H. Balthasar
Spectropolarimetric Observations of an Arch Filament System with GREGOR
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- 10:40 – 11:40 **POSTER SESSION + COFFEE BREAK**
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- 11:40 – 12:05 C.J. Diaz Baso
Inference of magnetic fields in an active region filament
- 12:05 – 12:30 Y. Xiaoli
The change of photospheric magnetic fields before filament formation and eruptions

SESSION 3
POLARIMETRY AS A DIAGNOSTIC TOOL FOR STELLAR ATMOSPHERES

Chair: Anusha, L.

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- 12:30 – 13:05 S. Berdyugina (Review)
Polarized Scattering due to Molecules, Particles and Biopigments in Stellar and Planetary Atmosphere

FREE LUNCH
15:30 VISIT OF THE "OPERA DEL DUOMO" MUSEUM

THURSDAY, September 15

- 9:00 – 9:25 R. Schlichenmaier
The fine-structure of a faint sunspot light bridge
- 9:25 – 9:50 M. Murabito
Formation of the penumbra and start of the Evershed flow
- 9:50 – 10:15 L. Deng
New Vacuum Solar Telescope Observations of Solar Fine-scale Structures in the Lower Atmosphere
- 10:15 – 10:40 A. Pastor Yabar
Magnetic topology of the North solar pole

10:40 – 11:10 COFFEE BREAK

- 11:10 – 11:35 L. Rachmeler
Coronal polarization of pseudostreamers and the solar polar field reversal
- 11:35 – 12:00 B. Tessore
Spectropolarimetric study of red supergiant stars

SESSION 4-II
SPACE-BORNE POLARIZATION MEASUREMENTS:
OBSERVATIONS, ANALYSIS AND INTERPRETATION
Chair: McKenzie, D.

- 12:00 – 12:35 S. Fineschi (Review)
Coronal Polarimetry: Future prospects for space- and ground-based observations
- 12:35 – 13:00 R. Kano
Lyman-alpha scattering polarization observed with the Chromospheric Lyman-Alpha Spectro-Polarimeter

13:00 – 14:30 LUNCH

- 14:30 – 14:55 J. Stepan
CLASP: Lyman-alpha spectropolarimetric observations versus radiative transfer modeling
- 14:55 – 15:20 R. Ishikawa
Comparison of the Scattering Polarization Observed by CLASP; Possible indication of the Hanle Effect
- 15:20 – 15:45 C. Fischer
Temporal evolution of an exploding granule and its surrounding magnetic elements

15:45 – 16:15 COFFEE BREAK

- 16:15 – 16:40 S. Solanki
First results from the second science flight of Sunrise
- 16:40 – 17:05 J.C. del Toro Iniesta
On the role of convectively driven sinks on magnetic field evolution in the quiet Sun
- 17:05 – 17:30 L. Anusha
Evolution of quiet-Sun small scale magnetic features using Sunrise observations
- 17:30 – 17:55 Gorobets
Markov fluctuations of the magnetic concentrations in the quiet Sun

20:00 SOCIAL DINNER

FRIDAY, September 16

- 9:00 – 9:25 F. Kahil
Brightness of solar magnetic elements as a function of magnetic flux at high spatial resolution
- 9:25 – 9:50 A. Kaithakkal
Moving Magnetic Features around a Pore
- 9:50 – 10:15 S. Guglielmino
On the magnetic nature of solar exploding granules

SESSION 5
INSTRUMENTATION FOR POLARIZATION STUDIES
Chair: Narukage, N.

- 10:15 – 10:50 W. Cao (Review)
The 1.6 Meter New Solar Telescope at Big Bear Solar Observatory

10:50 – 11:20 COFFEE BREAK

- 11:20 – 11:45 K. Ahn
Calibration of the Instrumental Crosstalk for the Near-IR Imaging Spectropolarimeter at the NST
- 11:45 – 12:10 D. Harrington
DKIST Polarization Modeling and Performance Predictions
- 12:10 – 12:35 S. Sueoka
Progress in modeling polarization optical components for the Daniel K. Inouye Solar Telescope
- 12:35 – 13:00 T. Baur
New Optical tools for polarimetry and polarization control

13:00 – 14:30 LUNCH

- 14:30 – 14:55 S. Yuan
Polarization modeling for the main optics of Chinese Giant Solar Telescope
- 14:55 – 15:20 Z. Qu
Progresses in Shaping Fiber Arrayed Solar Optic Telescope (FASOT)
- 15:20 – 15:45 J. Hou
Spectral-modulation-based polarization calibration method for AIMS telescope

15:45 – 16:15 COFFEE BREAK

- 16:15 – 16:40 F. Berrilli
The calibration pipeline for the MOTH II - Magneto Optical filters at Two Heights
- 16:40 – 17:05 F. Landini
PENCIL: a wire grid polarimeter at 121.6 nm
- 17:05 – 17:30 M. Demidov
On the cross-calibration of the HSOS SMAT full disk longitudinal magnetograms with data sets from some other instruments

SUMMARY AND CONCLUSIONS
Chairs: Belluzzi, L., Casini, R., and Trujillo Bueno, J.

- 17:30 – 17:55 J. Stenflo
Summary talk
- 17:55 – 18:00 Conference close

POSTERS

SESSION 2

MODELING OF POLARIZATION IN THE ATMOSPHERES OF THE SUN AND OTHER STARS

1. L. Anusha
Spatial structuring in the scattering polarization line profiles in the solar chromosphere
2. S. Gunár
3D Whole-Prominence Fine Structure model as a test case for verification and development of magnetic field inversion techniques
3. J. Stepan
Modeling the scattering polarization of the hydrogen Ly-alpha and Si III lines observed by CLASP in a filament channel
4. Z. Yang
The Relation between the magnetic field and rotation of sunspots

SESSION 3

POLARIMETRY AS A DIAGNOSTIC TOOL FOR STELLAR ATMOSPHERES

5. G. Dima
Hanle coronal magnetometry using permitted HeI 1083nm and forbidden SiX 1430.1nm IR emission lines
6. D. Fabbian
Internetwork magnetic flux density in 3D magneto-hydrodynamic simulations and observations
7. D. Fabbian
Physical and observable parameters derived from 3D magneto-convection simulations of the Sun's photosphere
8. M. Gangi
Detection of liner polarization in strong metal lines of 89 Herculis
9. M. Sampoorina
Polarized scattering matrix for magnetic dipole transitions
10. T. Vieu
How to infer the Sun's global magnetic field using the Hanle effect

SESSION 4-I

GROUND-BASED POLARIZATION MEASUREMENTS: OBSERVATIONS, ANALYSIS AND INTERPRETATION

11. H. Balthasar
Near-infrared spectropolarimetry of the trailing sunspots of NOAA 12396
12. N. Bello González
New insights on penumbra formation - The origin of the counter-Evershed flow
13. M. Demidov
On the Time Variations of Magnetic Strength Ratios in Different Combinations of Spectral Lines
14. Y. Hanaoka
Statistical Study of the Magnetic Field in Solar Filaments
15. D. Hiriart
Long Term Photopolarimetric Monitoring of Bright Blazars at San Pedro Mártir Observatory
16. R. Ramelli
Atlas of the solar intensity spectrum and its center to limb variation
17. R. Ramelli
Measurement of the evolution of the magnetic field of the quiet photosphere during a solar cycle
18. F. Zeuner
Fast Solar Polarimeter (prototype): preliminary results of Stokes measurements in the Sr I (4607 Å) line at VTT/TESOS

SESSION 4-II

SPACE-BORNE POLARIZATION MEASUREMENTS: OBSERVATIONS, ANALYSIS AND INTERPRETATION

19. S. Di Serego Alighieri
The conventions for the polarization angle
20. N. Narukage
Temporal variation in the Ly-alpha linear polarization observed with the CLASP sounding rocket
21. H. Strecker
Sunspot decay: Transition from moat flow to supergranular flow cell

SESSION 5

INSTRUMENTATION FOR POLARIZATION STUDIES

22. T. Anan
Developments of a spectro-polarimeter observing multi-wavelength windows simultaneously at Hida observatory
23. A. de Wijn
First results from the Chromosphere and Prominence Magnetometer Chromag
24. K. Ichimoto
Application of New Birefringent Tunable Filters at Hida Observatory
25. T. Kvernadze
Polarization-holographic imaging Stokes polarimeter for observational study of the Sun
26. H. Lin
Tomographic Mission from Space to Disentangle the 3D Magnetic and Thermodynamic Structures of the Solar Corona
27. D. McKenzie
CLASP2: The Chromospheric Layer Spectro-Polarimeter
28. Y. Shen
Fine Magnetic Structure and Origin of Counter-streaming Mass Flows in a Quiescent Solar Prominence
29. D. Wang
Lyot Filter Based on Liquid Crystal Variable Retarder
30. Y. Xin
Polarimetric Measurement System of Lijiang 2.4 meter telescope