Prof. Alessandro Lanzafame

Curriculum vitae

Contact
Prof. Alessandro Lanzafame
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Area of expertise: Stellar Physics, Solar Physics, Stellar Systems, Stellar evolution, Atomic Physics.

Relevant Employment and Educational History

Education

1989	Degree in Physics, University of Catania
1984	Doctor Of Philosophy (PhD), Queens University of Belfast

Employment

1990 – 1993	Post-Graduate Research Assistant, Armagh Observatory, UK
1994	Post-Doctoral Research Assistant, Armagh Observatory, UK
1995 – 1996	Research Fellow, University of Strathclyde, Glasgow, UK
1997 – present	Researcher, University of Catania
2006 – present	Adjunct Professor, University of Catania

Research Interests
Angular momentum evolution of low-mass stars and formation of planetary systems. Stellar magnetic activity. Modelling of stellar chromospheres. Structure of the solar outer atmosphere. Formation of helium lines in the Sun and solar-like stars. Mass accretion in young stars. Inelastic atomic scattering in tenuous plasmas. Supervisor of 12 graduate PhD students.

Publication Summary (as of 9th of August 2016, source ADS)
139 papers published, 74 refereed, 1482 citations, h-index=22.

Selected Research-Related Public Service Positions

- INAF Associated Researcher
- Member of the ADAS (Atomic Data and Analysis Structure) steering committee
- Member of the Data Processing and Analysis Consortium (DPAC) for the ESA Gaia space mission
- Manager of the Gaia-DPAC work packages *Special Variability Detection*, *Solar-like Variability* and *Extended Stellar Parametrizer – Cool Stars*
- Member of the steering committee for the Italian participation in the ESA Gaia space mission

- Co-Investigator in the Gaia-ESO Large Spectroscopic Survey; manager of the *Pre-Main Sequence Spectrum Analyses* working group
- Referee for the Journals: Astronomy & Astrophysics, Astrophysical Journal, Monthly Notices of the Royal Astronomical Society

Summary of Grant income > 10 kEuro

1998	PRIN-MIUR (Participant)
2003	PRIM-MIUR (Participant)
2008	PRIN-INAF (Participant, 120kEuro)
2010	PRIN-INAF (Participant, 140kEuro)
2008	ASI contract *The Gaia mission: the Italian participation in the DPAC Consortium* (Co-I, Local coordinator, 1.6MEuro)
2010	Accordo attuativo ASI-INAF *Missione Gaia - Partecipazione Italiana al DPAC* (Co-I, Local coordinator, 3.7MEuro)
2013	INAF Premiale Gaia-ESO (Co-I, Local coordinator, 360 kEuro)
2014	PRIN-INAF *The Gaia-ESO survey* (Co-I, Local coordinator, 186 kEuro)

Teaching Activities

University Teaching

1997 – 2000	Laboratory for Astrophysics (assistant)
2000 – 2001	Stellar Physics (60h)
2001 – 2006	Astronomy (60h)
2003 – 2010	Cosmology (48h)
2006 – 2008	Stellar Physics (48h)
2010 – 2012	Elements of Planetology and Cosmology (48h)
2010 – present	Astrophysics (48h)

Postgraduate

1991 – 1992	Radiative Transfer in stellar atmospheres (Master of Science, Department of Applied Mathematics and Theoretical Physics, Queen's University Belfast)
1996 – 1997	Stellar Spectroscopy (PhD in Physics, University of Catania)
1999	Elemental abundances in stellar atmospheres (PhD in Physics, University of Catania)
2003 – 2008	The Origins of Modern Science

Public Outreach Activity

- Talks at schools and amateur groups on Astrophysics, Cosmology, and History of Science
- Talks during visits of students of secondary schools at the INAF-Catania Astrophysical Observatory on Astrophysics and Cosmology

Professional Affiliations

- Member of the International Astronomical Union (IAU)
- Member of the Royal Astronomical Society (1992 - 1995)

List of refereed publications

74. TheGaia-ESO Survey: revisiting the Li-rich giant problem, Casey, A. R., Ruchti, G., Masseron, T., et al. 2016, Monthly Notices of the Royal Astronomical Society, 461, 3336

73. The Gaia-ESO Survey: pre-main-sequence stars in the young open cluster NGC 3293, Delgado, A. J., Sampedro, L., Alfaro, E. J., et al. 2016, Monthly Notices of the Royal Astronomical Society, 460, 3305

72. The Gaia-ESO Survey: the selection function of the Milky Way field stars, Stonkutė, E., Koposov, S. E., Howes, L. M., et al. 2016, Monthly Notices of the Royal Astronomical Society, 460, 1131

71. Gaia-ESO Survey: Gas dynamics in the Carina nebula through optical emission lines, Damiani, F., Bonito, R., Magrini, L., et al. 2016, Astronomy and Astrophysics, 591, A74

70. The Gaia-ESO Survey: Inhibited extra mixing in two giants of the open cluster Trumpler 20?, Smiljanic, R., Franciosini, E., Randich, S., et al. 2016, Astronomy and Astrophysics, 591, A62

69. Lower limit for differential rotation in members of young loose stellar associations, Distefano, E., Lanzafame, A. C., Lanza, A. F., Messina, S., & Spada, F. 2016, Astronomy and Astrophysics, 591, A43

68. The Gaia-ESO Survey: A lithium-rotation connection at 5 Myr?, Bouvier, J., Lanzafame, A. C., Venuti, L., et al. 2016, Astronomy and Astrophysics, 590, A78

67. The Gaia-ESO Survey: Sodium and aluminium abundances in giants and dwarfs. Implications for stellar and Galactic chemical evolution, Smiljanic, R., Romano, D., Bragaglia, A., et al. 2016, Astronomy and Astrophysics, 589, A115

66. The Gaia-ESO Survey: membership and initial mass function of the γ Velorum cluster, Prisinzano, L., Damiani, F., Micela, G., et al. 2016, Astronomy and Astrophysics, 589, A70

65. The Gaia-ESO Survey: Dynamical analysis of the L1688 region in Ophiuchus, Rigliaco, E., Wilking, B., Meyer, M. R., et al. 2016, Astronomy and Astrophysics, 588, A123

64. The Gaia-ESO Survey: Stellar radii in the young open clusters NGC 2264, NGC 2547, and NGC 2516, Jackson, R. J., Jeffries, R. D., Randich, S., et al. 2016, Astronomy and Astrophysics, 586, A52

63. Rotational evolution of slow-rotator sequence stars, Lanzafame, A. C., & Spada, F. 2015, Astronomy and Astrophysics, 584, A30

62. The Gaia-ESO Survey: chemical signatures of rocky accretion in a young solar-type star, Spina, L., Palla, F., Randich, S., et al. 2015, Astronomy and Astrophysics, 582, L6

61. Kinematics and Chemistry of Recently Discovered Reticulum 2 and Horologium 1 Dwarf Galaxies, Koposov, S. E., Casey, A. R., Belokurov, V., et al. 2015, The Astrophysical Journal, 811, 62

60. The Gaia-ESO Survey: Catalogue of Hα emission stars, Traven, G., Zwitter, T., Van Eck, S., et al. 2015, Astronomy and Astrophysics, 581, A52

59. The Gaia-ESO Survey: Empirical determination of the precision of stellar radial velocities and projected rotation velocities, Jackson, R. J., Jeffries, R. D., Lewis, J., et al. 2015, Astronomy and Astrophysics, 580, A75

58. The Gaia-ESO Survey: N-body modelling of the Gamma Velorum cluster, Mapelli, M., Vallenari, A., Jeffries, R. D., et al. 2015, Astronomy and Astrophysics, 578, A35

57. The Gaia-ESO Survey: Tracing interstellar extinction, Schultheis, M., Kordopatis, G., Recio-Blanco, A., et al. 2015, Astronomy and Astrophysics, 577, A77

56. On Extreme-ultraviolet Helium Line Intensity Enhancement Factors on the Sun, Giunta, A. S., Fludra, A., Lanzafame, A. C., et al. 2015, The Astrophysical Journal, 803, 66

55. Gaia-ESO Survey: Analysis of pre-main sequence stellar spectra, Lanzafame, A. C., Frasca, A., Damiani, F., et al. 2015, Astronomy and Astrophysics, 576, A80

54. The Gaia-ESO Survey: Chromospheric emission, accretion properties, and rotation in γ Velorum and Chamaeleon, Frasca, A., Biazzo, K., Lanzafame, A. C., et al. 2015, Astronomy and Astrophysics, 575, A4

53. The Gaia-ESO survey: Discovery of a spatially extended low-mass population in the Vela OB2 association, Sacco, G. G., Jeffries, R. D., Randich, S., et al. 2015, Astronomy and Astrophysics, 574, L7

52. The VLT/NaCo large program to probe the occurrence of exoplanets and brown dwarfs in wide orbits. I. Sample definition and characterization, Desidera, S., Covino, E., Messina, S., et al. 2015, Astronomy and Astrophysics, 573, A126

51. The Gaia-ESO Survey: Extracting diffuse interstellar bands from cool star spectra. DIB-based interstellar medium line-of-sight structures at the kpc scale, Puspitarini, L., Lallement, R., Babusiaux, C., et al. 2015, Astronomy and Astrophysics, 573, A35

50. The Gaia-ESO Survey: the chemical structure of the Galactic discs from the first internal data release, Mikolaitis, Š., Hill, V., Recio-Blanco, A., et al. 2014, Astronomy and Astrophysics, 572, A33

49. The Gaia-ESO Survey: The analysis of high-resolution UVES spectra of FGK-type stars, Smiljanic, R., Korn, A. J., Bergemann, M., et al. 2014, Astronomy and Astrophysics, 570, A122

48. The Gaia-ESO Survey: metallicity and kinematic trends in the Milky Way bulge, Rojas-Arriagada, A., Recio-Blanco, A., Hill, V., et al. 2014, Astronomy and Astrophysics, 569, A103

47. The Gaia-ESO Survey: Stellar content and elemental abundances in the massive cluster NGC 6705, Cantat-Gaudin, T., Vallenari, A., Zaggia, S., et al. 2014, Astronomy and Astrophysics, 569, A17

46. The Gaia-ESO Survey: Metallicity of the Chamaeleon I star-forming region, Spina, L., Randich, S., Palla, F., et al. 2014, Astronomy and Astrophysics, 568, A2

45. The Gaia-ESO Survey: the first abundance determination of the pre-main-sequence cluster gamma Velorum, Spina, L., Randich, S., Palla, F., et al. 2014, Astronomy and Astrophysics, 567, A55

44. The Gaia-ESO Survey: the Galactic thick to thin disc transition, Recio-Blanco, A., de Laverny, P., Kordopatis, G., et al. 2014, Astronomy and Astrophysics, 567, A5

43. Gaia-ESO Survey: Empirical classification of VLT/Giraffe stellar spectra in the wavelength range 6440-6810 Å in the γ Velorum cluster, and calibration of spectral indices, Damiani, F., Prisinzano, L., Micela, G., et al. 2014, Astronomy and Astrophysics, 566, A50

42. The Gaia-ESO Survey: processing FLAMES-UVES spectra, Sacco, G. G., Morbidelli, L., Franciosini, E., et al. 2014, Astronomy and Astrophysics, 565, A113

41. The Gaia-ESO Survey: radial metallicity gradients and age-metallicity relation of stars in the Milky Way disk, Bergemann, M., Ruchti, G. R., Serenelli, A., et al. 2014, Astronomy and Astrophysics, 565, A89

40. The Gaia-ESO Survey: Kinematic structure in the Gamma Velorum cluster, Jeffries, R. D., Jackson, R. J., Cottaar, M., et al. 2014, Astronomy and Astrophysics, 563, A94

39. The Gaia astrophysical parameters inference system (Apsis). Pre-launch description, Bailer-Jones, C. A. L., Andrae, R., Arcay, B., et al. 2013, Astronomy and Astrophysics, 559, A74

38. Properties of multistranded, impulsively heated hydrodynamic loop models, Susino, R., Spadaro, D., Lanzafame, A. C., & Lanza, A. F. 2013, Astronomy and Astrophysics, 552, A17

37. Determination of rotation periods in solar-like stars with irregular sampling: the Gaia case, Distefano, E., Lanzafame, A. C., Lanza, A. F., et al. 2012, Monthly Notices of the Royal Astronomical Society, 421, 2774

36. Stellar libraries for Gaia, Sordo, R., Vallenari, A., Tantalo, R., et al. 2011, Journal of Physics Conference Series, 328, 012006

35. Modelling the rotational evolution of solar-like stars: the rotational coupling time-scale, Spada, F., Lanzafame, A. C., Lanza, A. F., Messina, S., & Collier Cameron, A. 2011, Monthly Notices of the Royal Astronomical Society, 416, 447

34. RACE-OC project: rotation and variability in the ϵ Chamaeleontis, Octans, and Argus stellar associations, Messina, S., Desidera, S., Lanzafame, A. C., Turatto, M., & Guinan, E. F. 2011, Astronomy and Astrophysics, 532, A10

33. The debris disk host star HD 61005: a member of the Argus association?, Desidera, S., Covino, E., Messina, S., et al. 2011, Astronomy and Astrophysics, 529, A54

32. RACE-OC project: Rotation and variability of young stellar associations within 100 pc, Messina, S., Desidera, S., Turatto, M., Lanzafame, A. C., & Guinan, E. F. 2010, Astronomy and Astrophysics, 520, A15

31. A semi-analytic approach to angular momentum transport in stellar radiative interiors, Spada, F., Lanzafame, A. C., & Lanza, A. F. 2010, Astrophysics and Space Science, 328, 279

30. A semi-analytic approach to angular momentum transport in stellar radiative interiors, Spada, F., Lanzafame, A. C., & Lanza, A. F. 2010, Monthly Notices of the Royal Astronomical Society, 404, 641

29. Signatures of Impulsive Localized Heating in the Temperature Distribution of Multi-Stranded Coronal Loops, Susino, R., Lanzafame, A. C., Lanza, A. F., & Spadaro, D. 2010, The Astrophysical Journal, 709, 499

28. Doppler imaging of the young late-type star LO Pegasi (BD+22deg4409) in 2003 September, Piluso, N., Lanza, A. F., Pagano, I., Lanzafame, A. C., & Donati, J.-F. 2008, Monthly Notices of the Royal Astronomical Society, 387, 237

27. Spots, plages, and flares on λ Andromedae and II Pegasi, Frasca, A., Biazzo, K., Taş, G., Evren, S., & Lanzafame, A. C. 2008, Astronomy and Astrophysics, 479, 557

26. The in-flight monitoring and validation of the SOHO CDS Normal Incidence Spectrometer radiometric calibration, Lang, J., Brooks, D. H., Lanzafame, A. C., et al. 2007, Astronomy and Astrophysics, 463, 339

25. Key problems in cool-star astrophysics, Pagano, I., Ayres, T. R., Lanzafame, A. C., et al. 2006, Astrophysics and Space Science, 303, 17

24. ADAS analysis of the differential emission measure structure of the inner solar corona. II. A study of the "quiet Sun" inhomogeneities from SOHO CDS-NIS spectra, Lanzafame, A. C., Brooks, D. H., & Lang, J. 2005, Astronomy and Astrophysics, 432, 1063

23. A Transient Heating Model for Coronal Structure and Dynamics, Spadaro, D., Lanza, A. F., Lanzafame, A. C., et al. 2003, The Astrophysical Journal, 582, 486

22. ADAS analysis of the differential emission measure structure of the inner solar corona . Application of the data adaptive smoothing approach to the SERTS-89 active region spectrum, Lanzafame, A. C., Brooks, D. H., Lang, J., et al. 2002, Astronomy and Astrophysics, 384, 242

21. Understanding the atmospheric structure of T Tauri stars - II. UV spectroscopy of RY Tau, BP Tau, RU Lupi, GW Ori and CV Cha, Brooks, D. H., Costa, V. M., Lago, M. T. V. T., & Lanzafame, A. C. 2001, Monthly Notices of the Royal Astronomical Society, 327, 177

20. Extreme-Ultraviolet Transition-Region Line Emission during the Dynamic Formation of Prominence Condensations, Lanza, A. F., Spadaro, D., Lanzafame, A. C., et al. 2001, The Astrophysical Journal, 547, 1116

19. Chromospheric two-component NLTE modelling of the binary system V 711 Tau = HR 1099, Lanzafame, A. C., Busà, I., & Rodonò, M. 2000, Astronomy and Astrophysics, 362, 683

18. Structure and dynamics of an active region loop system observed on the solar disc with SUMER on SOHO, Spadaro, D., Lanzafame, A. C., Consoli, L., et al. 2000, Astronomy and Astrophysics, 359, 716

17. A study of opacity in SOHO-SUMER and SOHO-CDS spectral observations. I. Opacity deduction at the limb, Brooks, D. H., Fischbacher, G. A., Fludra, A., et al. 2000, Astronomy and Astrophysics, 357, 697

16. Chromospheric imaging of the active binary system V 711 Tauri = HR 1099 in December 1992, Busà, I., Pagano, I., Rodonò, M., Neff, J. E., & Lanzafame, A. C. 1999, Astronomy and Astrophysics, 350, 571

15. Understanding the atmospheric structure of T Tauri stars - I. Improved atomic physics applied to IUE data of BP Tauri, Brooks, D. H., Costa, V. M., Lago, M. T. V. T., & Lanzafame, A. C. 1999, Monthly Notices of the Royal Astronomical Society, 307, 895

14. The quiet Sun extreme ultraviolet spectrum observed in normal incidence by the SOHO coronal diagnostic spectrometer, Brooks, D. H., Fischbacher, G. A., Fludra, A., et al. 1999, Astronomy and Astrophysics, 347, 277

13. The photosphere and chromosphere of the RS Canum Venaticorum star, II Pegasi. II. A multi-wavelength campaign in August/September 1992, Byrne, P. B., Abdul Aziz, H., Amado, P. J., et al. 1998, Astronomy and Astrophysics Supplement Series, 127, 505

12. Visible neutral helium lines in main sequence B-type stars: observations and NLTE calculations, Leone, F., & Lanzafame, A. C. 1998, Astronomy and Astrophysics, 330, 306

11. EUV Spectral Variability and Non-Equilibrium Ionisation in the 'Quiet' Sun, Brooks, D. H., Summers, H. P., Harrison, R. A., Lang, J., & Lanzafame, A. C. 1998, Astrophysics and Space Science, 261, 91

10. Behaviour of the HeI 587.6, 667.8, 706.5 and 728.1nm lines in B-type stars. On the helium stratification in the atmosphere of magnetic helium peculiar stars., Leone, F., & Lanzafame, A. C. 1997, Astronomy and Astrophysics, 320, 893

9. Helium lines in late-type dwarfs., Lanzafame, A. C., & Byrne, P. B. 1995, Astronomy and Astrophysics, 303, 155

8. The upper chromosphere and lower transition region of dMe stars. Atmospheric models, ambipolar diffusion and streaming particles., Lanzafame, A. C. 1995, Astronomy and Astrophysics, 302, 839

7. The photosphere and chromosphere of the RS Canum Venaticorum star, II Pegasi I. Spots and chromospheric emission in 1991., Byrne, P. B., Panagi, P. M., Lanzafame, A. C., et al. 1995, Astronomy and Astrophysics, 299, 115

6. High-resolution spectroscopy and NLTE calculations of the HeI 10830A line in magnetic chemically peculiar stars. A search for indirect evidences of hot stellar envelopes., Leone, F., Lanzafame, A. C., & Pasquini, L. 1995, Astronomy and Astrophysics, 293, 457

5. Optical Flaring on Rs-Canum Stars - the Case of II-Pegasi in 1992SEP, Byrne, P. B., Lanzafame, A. C., Sarro, L. M., & Ryans, R. 1994, Monthly Notices of the Royal Astronomical Society, 270, 427

4. BD+22DEG4409 - a Rapidly Rotating Low-Mass Member of the Local Association, Jeffries, R. D., Byrne, P. B., Doyle, J. G., et al. 1994, Monthly Notices of the Royal Astronomical Society, 270, 153

3. SiII resonance multiplets in the Sun, Lanzafame, A. C. 1994, Astronomy and Astrophysics, 287, 972

2. Collision Strengths and Rate Coefficients for Electron Impact Excitation in Hei - an Extrapolation of R-Matrix Calculations to Higher Electron Impact Energies, Lanzafame, A. C., Tully, J. A., Berrington, K. A., et al. 1993, Monthly Notices of the Royal Astronomical Society, 264, 402

1. The formation of helium lines in the atmospheres of dMe stars, Lanzafame, A. C. 1991, Irish Astronomical Journal, 20, 84