

Publications

First or second author peer-reviewed

1. Caliskan S, **Amarsi A. M.**, Racca M., Koutsouridou I., Barklem P. S., et al. (*2 more*)
Revisiting inelastic Cu+H collisions and the non-LTE Galactic evolution of copper
2025, [A&A](#), in press
2. Lagae C., **Amarsi A. M.**, Lind K.
3D non-LTE Ca II line formation in metal-poor FGK stars. I. Abundance corrections, radial velocity corrections, and synthetic spectra
2025, [A&A](#), in press
3. Jurewicz A. J. G., **Amarsi A. M.**, Burnett D. S., Grevesse N.
Differences in elemental abundances between CI chondrites and the solar photosphere
2024, [Meteorit. Planet. Sci.](#), 59, 3193
4. **Amarsi A. M.**, Ogneva D., Buldgen G., Grevesse N., Zhou Y., et al. (*1 more*)
The solar beryllium abundance revisited with 3D non-LTE models
2024, [A&A](#), 690, A128
5. Lind K., **Amarsi A. M.**
3D non-LTE abundance analyses of late-type stars
2024, [ARA&A](#), 62, 475
6. Barklem P. S., **Amarsi A. M.**
Revisiting the statistical equilibrium of H⁻ in stellar atmospheres
2024, [A&A](#), 689, A100
7. Kochukhov O., **Amarsi A. M.**, Lavail A., Ruh H. L., Hahlin A., et al. (*8 more*)
A conclusive non-detection of magnetic field in the Am star o Peg with high-precision near-infrared spectroscopy
2024, [A&A](#), 689, A36
8. Matsuno T., **Amarsi A. M.**, Carlos M., Nissen P. E.
3D non-local thermodynamic equilibrium magnesium abundances reveal a distinct halo population
2024, [A&A](#), 688, A72
9. Nissen P. E., **Amarsi A. M.**, Skúladóttir Á., Schuster W. J.
Abundances of iron-peak elements in accreted and in situ born Galactic halo stars
2024, [A&A](#), 682, A116
10. Zhou Y., **Amarsi A. M.**, Aguirre Børnsen-Koch V., Karlsmose K. G., Collet R., et al. (*1 more*)
3D Stagger model atmospheres with FreeEOS I. Exploring the impact of microphysics on the Sun
2023, [A&A](#), 677, A98
11. Lagae C., **Amarsi A. M.**, Rodríguez Díaz L. F., Lind K., Nordlander T., et al. (*2 more*)
Raising the observed metallicity floor with a 3D non-LTE analysis of SDSS J102915.14+172927.9
2023, [A&A](#), 672, A90
12. Sharda P., **Amarsi A. M.**, Grasha K., Krumholz M. R., Yong D., et al. (*3 more*)
The impact of carbon and oxygen abundances on the metal-poor initial mass function
2023, [MNRAS](#), 518, 3985
13. **Amarsi A. M.**, Liljegegren S., Nissen P. E.
3D non-LTE iron abundances in FG-type dwarfs
2022, [A&A](#), 668, A68

14. **Amarsi A. M.**, Grevesse N., Asplund M., Collet R.
The solar carbon, nitrogen, and oxygen abundances from a 3D LTE analysis of molecular lines
2021, [A&A](#), **656**, A113
15. Asplund M., **Amarsi A. M.**, Grevesse N.
The chemical make-up of the Sun: A 2020 vision
2021, [A&A](#), **653**, A141
16. Li W., **Amarsi A. M.**, Papoulias A., Ekman J., Jönsson P.
Extended theoretical transition data in C I – IV
2021, [MNRAS](#), **502**, 3780
17. Barklem P. S., **Amarsi A. M.**, Grumer J., Eklund G., Rosén S., et al. (*4 more*)
Mutual neutralisation in $\text{Li}^+ + \text{H}^-/\text{D}^-$ and $\text{Na}^+ + \text{H}^-/\text{D}^-$ collisions: implications of experimental results for non-LTE modeling of stellar spectra
2021, [ApJ](#), **908**, 245
18. **Amarsi A. M.**, Lind K., Osorio Y., Nordlander T., Bergemann M., et al. (*21 more*)
The GALAH Survey: non-LTE departure coefficients for large spectroscopic surveys
2020, [A&A](#), **642**, A62
19. **Amarsi A. M.**, Grevesse N., Grumer J., Asplund M., Barklem P. S., et al. (*1 more*)
The 3D non-LTE solar nitrogen abundance from atomic lines
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20. **Amarsi A. M.**, Nissen P. E., Skúladóttir Á.
Carbon, oxygen, and iron abundances in disk and halo stars. Implications of 3D non-LTE spectral line formation
2019, [A&A](#), **630**, A104
21. Reggiani H., **Amarsi A. M.**, Lind K., Barklem P. S., Zatsarinny O., et al. (*5 more*)
Non-LTE analysis of K I in late-type stars
2019, [A&A](#), **627**, A177
22. **Amarsi A. M.**, Barklem P. S.
Excitation and charge transfer in low-energy hydrogen atom collisions with neutral carbon and nitrogen
2019, [A&A](#), **625**, A78
23. **Amarsi A. M.**, Barklem P. S., Collet R., Grevesse N., Asplund M.
3D non-LTE line formation of neutral carbon in the Sun
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24. Vasilyev V., **Amarsi A. M.**, Ludwig H. G., Lemasle B.
Two dimensional non-LTE O I 777 nm line formation in radiation hydrodynamics simulations of Cepheid atmospheres
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25. **Amarsi A. M.**, Nissen P. E., Asplund M., Lind K., Barklem P. S.
Carbon and oxygen in metal-poor halo stars
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26. **Amarsi A. M.**, Barklem P. S., Asplund M., Collet R., Zatsarinny O.
Inelastic O+H collisions and the O I 777 nm solar centre-to-limb variation
2018, [A&A](#), **616**, A89
27. **Amarsi A. M.**, Nordlander T., Barklem P. S., Asplund M., Collet R., et al. (*1 more*)
Effective temperature determinations of late-type stars based on 3D non-LTE Balmer line formation
2018, [A&A](#), **615**, A139
28. Lind K., **Amarsi A. M.**, Asplund M., Barklem P. S., Bautista M., et al. (*5 more*)
Non-LTE line formation of Fe in late-type stars: IV. Modelling of the solar centre-to-limb variation in 3D
2017, [MNRAS](#), **468**, 4311

29. **Amarsi A. M.**, Asplund M.
The solar silicon abundance based on 3D non-LTE calculations
2017, MNRAS, 464, 264
30. Nordlander T., **Amarsi A. M.**, Lind K., Asplund M., Barklem P. S., et al. (3 more)
3D NLTE analysis of the most iron-deficient star, SMSS0313-6708
2017, A&A, 597, A6
31. **Amarsi A. M.**, Lind K., Asplund M., Barklem P. S., Collet R.
Non-LTE line formation of Fe in late-type stars: III. 3D non-LTE analysis of metal-poor stars
2016, MNRAS, 463, 1518
32. **Amarsi A. M.**, Asplund M., Collet R., Leenaarts J.
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33. **Amarsi A. M.**, Asplund M., Collet R., Leenaarts J.
The Galactic chemical evolution of oxygen inferred from 3D non-LTE spectral line formation calculations
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34. **Amarsi A. M.**
On line contribution functions and examining spectral line formation in 3D model stellar atmospheres
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35. Giribaldi R. E., Magrini L., Rossi M., **Amarsi A. M.**, Romano D., et al. (1 more)
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2025, A&A, in press
36. Buder S., Kos J., Wang E. X., McKenzie M., Howell M., et al. (34 more)
The GALAH Survey: data release 4
2025, PASA, in press
37. Mohorian M., Kamath D., Menon M., **Amarsi A. M.**, Van Winckel H., et al. (2 more)
Tracing chemical depletion in evolved binaries hosting second-generation transition discs
2025, MNRAS, 538, 1339
38. Buldgen G., Noels A., **Amarsi A. M.**, Nandal D., Pezzotti C., et al. (3 more)
Constraints on the properties of macroscopic transport in the Sun from combined lithium and beryllium depletion
2025, A&A, 694, A285
39. Ryde N., Nandakumar G., Schultheis M., Kordopatis G., Di Matteo P., et al. (13 more)
Chemical abundances in the nuclear star cluster of the Milky Way: alpha-element trends and their similarities with the inner bulge
2025, ApJ, 979, 174
40. Guillaume C., Buldgen G., **Amarsi A. M.**, Dupret M. A., Lundkvist M. S., et al. (3 more)
The age of the Methuselah star in light of stellar evolution models with tailored abundances
2024, A&A, 692, L3
41. Lundqvist E., Zackrisson E., Hawcroft C., **Amarsi A. M.**, Welch B.
Spectroscopic characterisation of gravitationally lensed stars at high redshifts
2024, A&A, 690, A291
42. Rodríguez Díaz L. F., Lagae C., **Amarsi A. M.**, Bigot L., Zhou Y., et al. (4 more)
An extended and refined grid of 3D STAGGER model atmospheres. Processed snapshots for stellar spectroscopy
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43. Bétrisey J., Farnir M., Breton S. N., García R. A., Broomhall A.-M., et al. (*2 more*)
Imprint of the magnetic activity cycle on solar asteroseismic characterisation based on 26 years of GOLF and BiSON data
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44. Mallinson J. W. E., Lind K., **Amarsi A. M.**, Youakim K.
Titanium abundances in late-type stars. II. Grid of departure coefficients and application to a sample of 70 000 stars
2024, [A&A](#), **687**, A5
45. Skúladóttir Á., Koutsouridou I., Vanni I., **Amarsi A. M.**, Lucchesi R., et al. (*2 more*)
On the pair-instability supernova origin of J1010+2358
2024, [ApJL](#), **968**, L23
46. Buldgen G., Noels A., Scuflaire R., **Amarsi A. M.**, Grevesse N., et al. (*8 more*)
In-depth analysis of solar models with high-metallicity abundances and updated opacity tables
2024, [A&A](#), **686**, A108
47. Schmidt-May A. F., Barklem P. S., Grumer J., **Amarsi A. M.**, Björkhage M., et al. (*10 more*),
State-resolved mutual neutralization of $^{16}\text{O}^+$ with $^1\text{H}^-$ and $^2\text{H}^-$ at collision energies below 100 meV
2024, [Phys. Rev. A](#), **109**, 052820
48. Canocchi G., Lind K., Lagae C., Pietrow A. G. M., **Amarsi A. M.**, et al. (*3 more*)
3D non-LTE modeling of the stellar center-to-limb variation for transmission spectroscopy studies
2024, [A&A](#), **683**, A242
49. Caliskan S., Grumer J., **Amarsi A. M.**
Targeted optimization in small-scale atomic structure calculations: application to Au I
2024, [J. Phys. B](#), **57**, 055003
50. Buldgen G., Noels A., Baturin V. A., Oreshina A. V., Ayukov S. V., et al. (*2 more*)
Helioseismic determination of the solar metal mass fraction
2024, [A&A](#), **681**, A57
51. Li W., Jönsson P., **Amarsi A. M.**, Li M. C., Grumer J.
Extended atomic data for oxygen abundance analyses
2023, [A&A](#), **674**, A54
52. Kochukhov O., Gürsoytak Mutlay H., **Amarsi A. M.**, Petit P., Mutlay I., et al. (*1 more*)
Surface structure of 45 Hercules: An otherwise unremarkable Ap star with a surprisingly weak magnetic field
2023, [MNRAS](#), **521**, 3480
53. Li M. C., Li W., Jönsson P., **Amarsi A. M.**, Grumer J.
Extended MCDHF calculations of energy levels and transition data for Ni
2023, [ApJS](#), **265**, 26
54. Aguado D. S., Salvadori S., Skúladóttir Á., Caffau E., Bonifacio P. C., et al. (*4 more*)
PISN-explorer: hunting the descendants of very massive first stars
2023, [MNRAS](#), **520**, 866
55. Carlos M., Marino A. F., Milone A. P., Dondoglio E., Jang S., et al. (*6 more*)
The chemical compositions of multiple stellar populations in the globular cluster NGC 2808
2023, [MNRAS](#), **519**, 1695
56. Buldgen G., Eggenberger P., Noels A., Scuflaire R., **Amarsi A. M.**, et al. (*2 more*)
Higher metal abundances do not solve the solar problem
2023, [A&A](#), **669**, L9
57. Mallinson J. W. E., Lind K., **Amarsi A. M.**, Barklem P. S., Grumer J., et al. (*2 more*)
Titanium abundances in late-type stars. I. 1D non-local thermodynamic equilibrium modelling in benchmark dwarfs and giants
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58. Grumer J., Eklund G., **Amarsi A. M.**, Barklem P. S., Rosén S., et al. (*5 more*)
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59. Buder S., Sharma S., Kos J., **Amarsi A. M.**, Nordlander T., et al. (*42 more*)
The GALAH+ Survey: third data release
2021, *MNRAS*, **506**, 150
60. Clark J. T., Clerté M., Hinkel N. R., Unterborn C. T., Wittenmyer R. A., et al. (*27 more*)
The GALAH Survey: using Galactic Archaeology to refine our knowledge of TESS target stars
2021, *MNRAS*, **504**, 4968
61. Skúladóttir Á., Salvadori S., **Amarsi A. M.**, Tolstoy E., Irwin M. J., et al. (*7 more*)
Zero-metallicity hypernova uncovered by an ultra-metal-poor star in the Sculptor dwarf spheroidal galaxy
2021, *ApJL*, **915**, L30
62. Cordoni G., Da Costa G. S., Yong D., Mackey A. D., Marino A. F., et al. (*14 more*)
Exploring the Galaxy's halo and very metal-weak thick disc with SkyMapper and Gaia DR2
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63. Zhou Y., Nordlander T., Casagrande L., Joyce M., Li Y., et al. (*3 more*)
The relationship between photometric and spectroscopic oscillation amplitudes from 3D stellar atmosphere simulations
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64. Wang E. X., Nordlander T., Asplund M., **Amarsi A. M.**, Lind K., et al. (*1 more*)
3D NLTE spectral line formation of lithium in late-type stars
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65. Gao X., Lind K., **Amarsi A. M.**, Buder S., Bland-Hawthorn J., et al. (*20 more*)
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66. Gao X., Lind K., **Amarsi A. M.**, Buder S., Dotter A., et al. (*25 more*)
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67. MacLean B. T., Campbell S. W., **Amarsi A. M.**, Nordlander T., Cottrell P. L., et al. (*5 more*)
On the AGB stars of M4: a robust disagreement between spectroscopic observations and theory
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68. Buder S., Asplund M., Duong L., Kos J., Lind K., et al., (*39 more*)
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69. Bergemann M., Collet R., **Amarsi A. M.**, Kovalev M., Ruchti G., et al. (*1 more*)
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Other publications

- Rauer H., Aerts C., Cabrera J., Deleuil M., Erikson A., et al. (*821 more*)
The PLATO Mission
2024, eprint arXiv:2406.05447

- Sharda P., **Amarsi A. M.**, Grasha K., Krumholz M. R., Yong D., et al. (*3 more*)
Correction to ‘The impact of carbon and oxygen abundances on the metal-poor initial mass function’
2023, [MNRAS](#), **525**, 3316
 - Mallinson J. W. E., Lind K., **Amarsi A. M.**, Barklem P. S., Grumer J., et al. (*2 more*)
Titanium abundances in late-type stars. I. 1D non-local thermodynamic equilibrium modelling in benchmark dwarfs and giants (Corrigendum)
2023, [A&A](#), **673**, C1
 - Skúladóttir Á., Puls A. A., **Amarsi A. M.**, Battaglia G., Buder S., et al. (*27 more*)
The 4MOST Survey of dwarf galaxies and their stellar streams (4DWARFS)
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 - Grumer J., Eklund G., **Amarsi A. M.**, Barklem P. S., Rosén S., et al. (*5 more*)
Erratum: State-resolved mutual neutralization of Mg⁺ and D⁻ [Phys. Rev. Lett. 128, 033401 (2022)]
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 - de Jong R. S., Agertz O., Berbel A. A., Aird J., Alexander D. A., et al. (*333 more*)
4MOST: project overview and information for the first call for proposals
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