

PUBLICATION LIST

Publications in peer-reviewed journals

1. *Impact of the Tayler magnetic instability on the surface abundance of boron in massive stars*
Asatiani, L.; Eggenberger, P.; Marchand, M.; Moyano, F. D.; Meynet, G. and **Choplin, A.**
2025, accepted in A&A [\[ADS\]](#)
2. *Fluorine production in He-burning regions of massive stars during cosmic history*
Tsiatsiou, S.; Meynet, G.; Farrell, E.; Hirai, Y.; **Choplin, A.**; Sibony, Y.; Martinet, S.; Guerço, R.; Smith, V.; Cunha, K.; Goriely, S.; Arnould, M.; Fernández-Trincado, J. and Ekström, S.
2025, A&A, 696, A241 [\[ADS\]](#)
3. *Synthesis of actinides and short-lived radionuclides during i-process nucleosynthesis in AGB stars*
Choplin, A.; Goriely, S.; Siess, L. and Martinet, S.
2025, EPJA, 61, 4 [\[ADS\]](#)
4. *Statistical framework for nuclear parameter uncertainties in nucleosynthesis modeling of r- and i-process*
Martinet, S.; Goriely, S.; **Choplin, A.** and Siess, L.
2025, EPJA, 61, 3 [\[ADS\]](#) + corrigendum : **2025**, EPJA, 61, 5 [\[ADS\]](#)
5. *Nuclear Level Density and γ -ray Strength Function of ^{67}Ni and the impact on the i-process*
Ingeberg, V. W.; Siem, S.; Wiedeking, M.; **Choplin, A.**; Goriely, S.; Siess, L.; Abrahams, K. J.; Arnswald, K.; Bello Garrote, F.; Bleuel, D. L.; Cederkäll, J.; Christoffersen, T. L.; Cox, D. M.; De Witte, H.; Gaffney, L. P.; Görden, A.; Henrich, C.; Illana, A.; Jones, P.; Kheswa, B. V.; Kröll, T.; Majola, S. N. T.; Malatji, K. L.; Ojala, J.; Pakarinen, J.; Rainovski, G.; Reiter, P.; von Schmid, M.; Seidlitz, M.; Tveten, G. M.; Warr, N. and Zeiser, F.
2025, PRC, 111, 1 [\[ADS\]](#)
6. *From the s-Process to the i-Process: A New Perspective on the Chemical Enrichment of Extrinsic Stars*
Van Eck, S.; Giribaldi, R. ; Merle, T.; Lambotte, A.; Karinkuzhi, D.; Goriely, S.; **Choplin, A.**; Storm, N.; Gerber, J.; Siess, L.; Bergemann, M. and Jorissen, A
2024, Galaxies, Vol. 12, Issue 6 [\[ADS\]](#)
7. *Proton ingestion in AGB stars as a possible explanation for J-type stars and AB2 grains*
Choplin, A.; Siess, L. and Goriely, S.
2024, A&A 691, L7 [\[ADS\]](#)
8. *Production of lithium and heavy elements in AGB stars experiencing PIEs*
Choplin, A.; Siess, L.; Goriely, S. and Martinet, S.
2024, Galaxies, Vol. 12, Issue 5 [\[ADS\]](#)
9. *Massive star evolution with a new $^{12}\text{C} + ^{12}\text{C}$ nuclear reaction rate. The core carbon-burning phase*
Dumont, T.; Monprieat, E.; Courtin, S.; **Choplin, A.**; Bonhomme, A.; Ekström, S.; Heine, M.; Curien, D.; Nippert, J. and Meynet, G.
2024, A&A 688, A115 [\[ADS\]](#)
10. *Rapidly rotating Population III stellar models as a source of primary nitrogen*
Tsiatsiou, S.; Sibony, Y.; Nandal, D.; Sciarini, L.; Hirai, Y.; Ekström, S.; Farrell, E.; Murphy, L.; **Choplin, A.**; Hirschi, R.; Chiappini, C.; Liu, B.; Bromm, V.; Groh, J. and Meynet, G.

2024, A&A 687, A307 [\[ADS\]](#)

11. *Experimental Determination of α Widths of ^{21}Ne Levels in the Region of Astrophysical Interest: New $^{17}\text{O} + \alpha$ Reaction Rates and Impact on the Weak s Process*
Hammache, F.; Adsley, P.; Lamia, L.; Harrouz, D. S.; de Séréville, N.; Bastin, B. ; **Choplin, A.**;
Faestermann, T.; Fougères, C.; Hertenberger, R.; Hirschi, R.; La Cognata, M.; Meyer, A.;
Palmerini, S.; Pizzone, R. G.; de Oliveira Santos, F.; Romano, S.; Tumino, A. and Wirth, H. -F.
2024, PRL 132, 18 [\[ADS\]](#)
12. *Systematic study of the low-lying electric dipole strength in Sn isotopes and its astrophysical implications*
Markova, M.; Larsen, A. C.; von Neumann-Cosel, P.; Litvinova, E.; **Choplin, A.**; Goriely, S.;
Martinet, S.; Siess, L.; Guttormsen, M.; Pogliano, F. and Siem, S.
2024, PRC 109, 5 [\[ADS\]](#)
13. *The intermediate neutron capture process. V. The i -process in AGB stars with overshoot*
Choplin, A.; Siess, L.; Goriely, S. and Martinet, S.
2024, A&A 684, A206 [\[ADS\]](#)
14. *Impact of different approaches to computing rotating stellar models. I. The case of solar metallicity*
Nandal, D.; Meynet, G.; Ekström, S.; Moyano, F. D.; Eggenberger, P.; **Choplin, A.**; Georgy, C.;
Farrell, E. and Maeder, A.
2024, A&A 684, A169 [\[ADS\]](#)
15. *The intermediate neutron capture process. IV. Impact of nuclear model and parameter uncertainties*
Martinet, S.; **Choplin, A.**; Goriely, S. and Siess, L.
2024, A&A 684, A8 [\[ADS\]](#)
16. *Does the i -process operate at nearly solar metallicity ?*
Karinkuzhi, D.; Van Eck, S.; Goriely, S.; Siess, L.; Jorissen, A.; **Choplin, A.**; Escorza, A.;
Shetye, S. and Van Winckel, H.
2023, A&A 677, A47 [\[ADS\]](#)
17. *Synthesis of Thorium and Uranium in AGB stars*
Choplin, A.; Goriely, S.; Siess, L.
2022, A&A 667, L13 [\[ADS\]](#)
18. *The intermediate neutron capture process. III. The i -process in AGB stars of different masses and metallicities without overshoot*
Choplin, A.; Siess, L.; Goriely, S.
2022, A&A 667, A155 [\[ADS\]](#)
19. *The impact of $^{17}\text{O} + \alpha$ reaction rate uncertainties on the s -process in rotating massive stars*
Frost-Schenk, J.; Adsley, P.; Laird, A. M.; Longland, R.; Angus, C.; Barton, C.; **Choplin, A.**;
Diget, C. Aa; Hirschi, R.; Marshall, C.; Portillo Chaves, F.; Setoodehnia, K.
2022, MNRAS, 514, 2650 [\[ADS\]](#)
20. *Constraints on key $^{17}\text{O}(\alpha, \gamma)^{21}\text{Ne}$ resonances and impact on the weak s process*
Williams, M.; Laird, A. M.; **Choplin, A.**; Adsley, P.; Davids, B.; Greife, U.; Hudson, K.;
Hutcheon, D.; Lennarz, A.; Ruiz, C.
2022, Phys. Rev. C, 105, 065805 [\[ADS\]](#)
21. *The p -process in exploding rotating massive stars*

Choplin, A.; Goriely, S.; Hirschi, R.; Tominaga, N.; Meynet, G.
2022, A&A 661, A86 [\[ADS\]](#)

22. *A new $^{12}\text{C} + ^{12}\text{C}$ nuclear reaction rate: Impact on stellar evolution*

Monprieat, E.; Martinet, S.; Courtin, S.; Heine, M.; Ekström, S.; Jenkins, D. G.; **Choplin, A.**;
Adsley, P.; Curien, D.; Moukaddam, M.; Nippert, J.; Tsiatsiou, S.; Meynet, G.
2022, A&A 661, A86 [\[ADS\]](#)

23. *The intermediate neutron capture process. II. Nuclear uncertainties*

Goriely, S.; Siess, L.; **Choplin, A.**
2021, A&A 654, A129 [\[ADS\]](#)

24. *Grids of stellar models with rotation. VI. Models from 0.8 to $120 M_{\odot}$ at a metallicity $Z = 0.006$*

EGGENBERGER, P.; Ekström, S.; Georgy, C.; Martinet, S.; Pezzotti, C.; Nandal, D.; Meynet, G.;
Buldgen, G.; Salmon, S.; Haemmerlé, L.; Maeder, A.; Hirschi, R.; Yusof, N.; Groh, J.; Farrell,
E.; Murphy, L.; **Choplin, A.**
2021, A&A 652, A137 [\[ADS\]](#)

25. *The intermediate neutron capture process. I. Development of the i -process in low-metallicity low-mass AGB stars*

Choplin, A.; Siess, L.; Goriely, S.
2021, A&A 648, A119 [\[ADS\]](#) + corrigendum : **2022**, A&A 662, C3 [\[ADS\]](#)

26. *Grids of stellar models with rotation - V. Models from 1.7 to $120 M_{\odot}$ at zero metallicity*

Murphy, L. J.; Groh, J. H.; Ekström, S.; Meynet, G.; Pezzotti, C.; Georgy, C.; **Choplin, A.**;
EGGENBERGER, P.; Farrell, E.; Haemmerlé, L.; Hirschi, R.; Maeder, A.; Martinet, S.
2021, MNRAS 501, 2745 [\[ADS\]](#)

27. *The R-Process Alliance: The Peculiar Chemical Abundance Pattern of RAVE
J183013.5–455510*

Placco, V. M.; Santucci, R. M.; Yuan, Z.; Mardini, M. K.; Holmbeck, E. M.; Wang, X.; Surman,
R.; Hansen, T. T.; Roederer, I. U.; Beers, T. C.; **Choplin, A.**; Ji, A.P.; Ezzeddine, R.; Frebel,
A.; Sakari, C. M.; Whitten, D. D. and Zepeda, J.
2020, ApJ 897, 78 [\[ADS\]](#)

28. *A strong neutron burst in jet-like supernovae of spinstars*

Choplin, A.; Tominaga, N. and Meyer B. S.
2020, A&A 639, A126 [\[ADS\]](#)

29. *Neutron-capture elements in dwarf galaxies II: Challenges for the s - and i -processes at low metallicity*

Skúladóttir, A.; Hansen, C. J.; **Choplin, A.**; Salvadori, S.; Hampel, M. and Campbell, S. W.
2020, A&A 634, A84 [\[ADS\]](#)

30. *Inferring the velocity of early massive stars from the abundances of extremely metal-poor stars*

Choplin, A.; Tominaga, N. and Ishigaki, M. N.
2019, A&A, 632, A62 [\[ADS\]](#)

31. *Neutron-capture elements in dwarf galaxies I: Chemical clocks & the short timescale of the r -process*

Skúladóttir, A.; Hansen, C. J.; Salvadori, S. and **Choplin, A.**
2019, A&A, 631, A171 [\[ADS\]](#)

32. *Grids of stellar models with rotation. IV. Models from 1.7 to $120 M_{\odot}$ at a metallicity $Z = 0.0004$*

Groh, J. H.; Ekström, S.; Georgy, C.; Meynet, G.; **Choplin, A.**; Eggenberger, P.; Hirschi, R.; Maeder, A.; Murphy, L. J.; Boian, I. and Farrell, E. J.
2019, A&A, 627, A24 [\[ADS\]](#)

33. *A direct measurement of the $^{17}\text{O}(\alpha,\gamma)^{21}\text{Ne}$ reaction in inverse kinematics and its impact on heavy element production*

Taggart, M. P.; Akers, C.; Laird, A. M.; Hager, U.; Ruiz, C.; Hutcheon, D. A.; Bentley, M. A.; Brown, J. R.; Buchmann, L.; Chen, A. A.; Chen, J.; Chipps, K. A.; **Choplin, A.**; D'Auria, J. M.; Davids, B.; Davis, C.; Diget, C. A.; Erikson, L.; Fallis, J.; Fox, S. P.; Frischknecht, U.; Fulton, B. R.; Galinski, N.; Greife, U.; Hirschi, R.; Howell, D.; Martin, L.; Mountford, D.; Murphy, A. St. J.; Ottewell, D.; Pignatari, M.; Reeve, S.; Ruprecht, G.; Sjøe, S.; Veloce, L. and Williams, M.
2019, Physics Letters B, 798, 134894 [\[ADS\]](#)

34. *The CORALIE survey for southern extrasolar planets. XVIII. Three new massive planets and two low-mass brown dwarfs at greater than 5 AU separation*

Rickman, E. L.; Ségransan, D.; Marmier, M.; Udry, S.; Bouchy, F.; Lovis, C.; Mayor, M.; Pepe, F.; Queloz, D.; Santos, N. C.; Allart, R.; Bonvin, V.; Bratschi, P.; Cersullo, F.; Chazelas, B.; **Choplin, A.**; Conod, U.; Deline, A.; Delisle, J.-B.; Dos Santos, L. A.; Figueira, P.; Giles, H. A. C.; Girard, M.; Lavie, B.; Martin, D.; Motalebi, F.; Nielsen, L. D.; Osborn, H.; Ottoni, G.; Raimbault, M.; Rey, J.; Roger, T.; Seidel, J. V.; Stalport, M.; Suárez Mascareño, A.; Triaud, A.; Turner, O.; Weber, L. and Wyttenbach, A.
2019, A&A, 625, A71 [\[ADS\]](#)

35. *Non standard s-process in massive rotating stars. Yields of $10 - 150 M_{\odot}$ models at $Z = 10^{-3}$*

Choplin, A.; Hirschi, R.; Meynet, G.; Ekström, S.; Chiappini, C. and Laird, A.
2018, A&A, 618, A133 [\[ADS\]](#)

36. *Are some CEMP-s stars the daughters of spinstars?*

Choplin, A.; Hirschi, R.; Meynet, G. and Ekström, S.
2017, A&A, 607, L3 [\[ADS\]](#)

37. *Effects of axions on Population III stars*

Choplin, A.; Coc, A.; Meynet, G.; Olive, Keith A.; Uzan, J.-P. and Vangioni, E.
2017, A&A, 605, A106 [\[ADS\]](#)

38. *Pre-supernova mixing in CEMP-no source stars*

Choplin, A.; Ekström, S.; Meynet, G.; Maeder, A.; Georgy, C. and Hirschi, R.
2017, A&A, 605, A63 [\[ADS\]](#)

39. *Constraints on CEMP-no progenitors from nuclear astrophysics*

Choplin, A.; Maeder, A.; Meynet, G. and Chiappini, C.
2016, A&A, 593, A36 [\[ADS\]](#)

Publications in conference proceedings

40. *The intermediate neutron-capture process at near solar metallicities*

Karinkuzhi, D.; Van Eck, S.; Jorissen, A.; Goriely, S.; Siess, L.; Merle, T.; **Choplin, A.**
2024, in 42nd meeting of the Astronomical Society of India (ASI), Vol. 42, P181 [\[ADS\]](#)

41. *Improving stellar modeling with new precise nuclear reaction rates determined from nuclear experiment*

Dumont, T.; Monpriat, E.; **Choplin, A.**; Bonhomme, A.; Heine, M.; Nippert, J. and Courtin, S. **2023**, in SF2A-2015: Proceedings of the Annual meeting of the French Society of Astronomy and Astrophysics [\[ADS\]](#)

42. *Progress in Nuclear Astrophysics: a multi-disciplinary field with still many open questions*
Goriely, S.; **Choplin, A.**; Ryssens, W. and Kullmann, I.
2023, Contribution to the proceedings of INPC 2022, Cape Town, South Africa [\[ADS\]](#)
43. *A new $^{12}\text{C} + ^{12}\text{C}$ nuclear reaction rate: Impact on stellar evolution*
Monpriat, E.; **Choplin, A.**; Martinet, S.; Courtin, S.; Heine, M.; Adsley, P.; Curien, D.; Dumont, T.; Ekström, S.; Jenkins, D. G.; Moukaddam, M.; Nippert, J.; Tsiatsiou, S. and Meynet, G.
2023, Nuclear Physics in Astrophysics - X (NPA-X 2022), Geneva, Switzerland, Edited by Freeman, S.; Lederer-Woods, C.; Manna, A.; Mengoni, A.; EPJ Web of Conferences, Volume 279, id.11016 [\[ADS\]](#)
44. *The intermediate neutron-capture process in AGB stars*
Choplin, A.; Siess, L.; Goriely, S.
2023, Nuclear Physics in Astrophysics - X (NPA-X 2022), Geneva, Switzerland, Edited by Freeman, S.; Lederer-Woods, C.; Manna, A.; Mengoni, A.; EPJ Web of Conferences, Volume 279, id.07001 [\[ADS\]](#)
45. *Improving stellar modeling with new precise nuclear reaction rates determined from nuclear experiment*
Dumont, T.; Monpriat, E.; **Choplin, A.**; Bonhomme, A.; Heine, M.; Nippert, J. and Courtin, S.
2023, in PLATO Stellar Science Conference 2023, 18 [\[ADS\]](#)
46. *Early Rotating Massive Stars and Abundances of Extremely Metal-Poor Stars*
Choplin, A.
2020, in Proceedings of the 15th International Symposium on Origin of Matter and Evolution of Galaxies (OMEG15), J. Phys. Soc. Jpn. [\[LINK\]](#)
47. *Nucleosynthesis in early rotating massive stars and chemical composition of CEMP stars*
Choplin, A. and Hirschi, R.
2020, NPA IX conference proceeding. in Journal of Physics Conference Series, Vol.1668 [\[ADS\]](#)
48. *Massive star evolution: feedbacks in low-Z environment*
Ekström, S.; Meynet, G.; Georgy, C.; Groh, J.; **Choplin, A.** and Song, H.
2019, in IAU Symposium, Vol. 344, Dwarf Galaxies: From the Deep Universe to the Present, ed. K. B. W. McQuinn & S. Stierwalt, 153–160 [\[ADS\]](#)
49. *Massive stars: stellar models and stellar yields, impact on Galactic Archaeology*
Meynet, G.; **Choplin, A.**; Ekström, S. and Georgy, C.
2018, in IAU Symposium, Vol. 334, Rediscovering Our Galaxy, ed. C. Chiappini, I. Minchev, E. Starkenburg, & M. Valentini, 170–177 [\[ADS\]](#)
50. *Nucleosynthesis in the first massive stars*
Choplin, A.; Meynet, G.; Maeder, A.; Hirschi, R. and Chiappini, C.
2018, in Journal of Physics Conference Series, Vol. 940, Journal of Physics Conference Series, 012021 [\[ADS\]](#)
51. *Toward the first stars: hints from the CEMP-no stars*
Choplin, A.

2017, in SF2A-2017: Proceedings of the Annual meeting of the French Society of Astronomy and Astrophysics, ed. C. Reyl  , P. Di Matteo, F. Herpin, E. Lagadec, A. Lan  on, Z. Meliani, & F. Royer, 93–96 [\[ADS\]](#)

52. *Insights on the First Stars from CEMP-no Stars*

Choplin, A.; Meynet, G.; Maeder, A.; Hirschi, R.; Ekstr  m, S. and Chiappini, C.
2017, in 14th International Symposium on Nuclei in the Cosmos (NIC2016), ed. S. Kubono, T. Kajino, S. Nishimura, T. Isobe, S. Nagataki, T. Shima, & Y. Takeda, 020202 [\[ADS\]](#)

53. *Evolution and Nucleosynthesis of Massive Stars*

Meynet, G.; Maeder, A.; **Choplin, A.**; Takahashi, K.; Ekstr  m, S.; Hirschi, R.; Chiappini, C. and Eggenberger, P.
2017, in 14th International Symposium on Nuclei in the Cosmos (NIC2016), ed. S. Kubono, T. Kajino, S. Nishimura, T. Isobe, S. Nagataki, T. Shima, & Y. Takeda, 010401 [\[ADS\]](#)

54. *Clues on the first stars from CEMP-no stars*

Choplin, A.; Meynet, G.; Maeder, A.; Hirschi, R.; Ekstr  m, S. and Chiappini, C.
2016, in IAU Symposium, Vol. 317, The General Assembly of Galaxy Halos: Structure, Origin and Evolution, ed. A. Bragaglia, M. Arnaboldi, M. Rejkuba, & D. Romano, 282–283 [\[ADS\]](#)

55. *Impact of rotation on stellar models*

Meynet, G.; Maeder, A.; Eggenberger, P.; Ekstrom, S.; Georgy, C.; Chiappini, C.; Privitera, G. and **Choplin, A.**
2016 in Astronomische Nachrichten, Vol.337, Issue 8-9, p.827 2016 [\[ADS\]](#)

56. *Clues About the First Stars from CEMP-no Stars*

Meynet, G.; Maeder, A.; **Choplin, A.**; Hirschi, R.; Ekstr  m, S. and Chiappini, C.
2015, IAU General Assembly, 22, 2255377 [\[ADS\]](#)

57. *Clues about the first stars from CEMP-no stars*

Choplin, A.; Meynet, G. and Maeder, A.
2015, in SF2A-2015: Proceedings of the Annual meeting of the French Society Annual meeting of the French Society of Astronomy and Astrophysics, ed. F. Martins, S. Boissier, V. Buat, L. Cambr  sy, & P. Petit, 355–358 [\[ADS\]](#)