



I am a theoretical and computational astrophysicist, and my interest in this field originates from the wide range of physical phenomena and processes occurring in astronomical context. I focus mostly on stellar physics, and in particular massive stars, binary evolution, stellar explosions (core-collapse and pulsational pair-instability supernovae), runaway and hyper-velocity stars, and time-domain, X-ray, and gravitational-wave astronomy.

Research Experience

2024 - present	Assistant Professor, University of Arizona, Steward Observatory
2021 - 2023	Flatiron research Fellow, CCA, Flatiron Institute, NY
2020 - 2021	Postdoctoral research Fellow, Columbia University, NY
2019 - 2020	Flatiron research Fellow, CCA, Flatiron Institute, NY
2015 - 2019	Ph.D. candidate, University of Amsterdam (UvA)
2017 (first semester)	Graduate Fellow, KITP (UC Santa Barbara)
2014 - 2015	Recurrent visiting researcher, Caltech
2013 (summer only)	INFN/LIGO Summer student, Caltech

Education

Ph.D. – Astrophysics

2015 - 2019, University of Amsterdam, adviser: Prof. Selma E. de Mink

Thesis title: *Live fast and die young: evolution and fate of massive stars*

Masters degree – Physics

2012 - 2015, Università di Pisa, advisers: Prof. Steven N. Shore, Prof. Christian D. Ott

Thesis title: *Systematic study of mass loss in the evolution of massive stars*

Bachelor degree – Physics

2009 - 2012, Università di Pisa, adviser: Prof. Giampiero Paffuti

Final project title: *Calculation of the non-relativistic component of Mercury's precession*

Grants & Awards

(Note that during my postdoctoral fellowships I was explicitly forbidden to apply for public grants)

2019-2023	Flatiron Research Fellow	CCA/Simons Foundation
2017	KITP Graduate fellowship	Kavli Institute for Theoretical Physics (KITP)

Travel grants

2015 - 2019	Leids Kerkhoven-Bosscha Fonds travel funds. Total amount 2200 €.
2014	Funds for thesis abroad, Università di Pisa. Total amount 2000 €.

Grants

2024	<i>Multi-D radiation-hydrodynamics simulations of massive binary mass transfer</i> PI NASA ATP, PI: Renzo, 380k\$
2022	Co-I Chandra proposal <i>BH candidate in an extreme heart-beat star</i> (PI: M. S. Oey)
2019	Co-I X-Shooter proposal <i>HOTFUSS</i> (PI: S. Geiger)
2018	Co-I Muse proposal <i>SMC cluster NGC 330 as a benchmark for single and binary evolution</i> (PI: J. Bodensteiner)
2016 - 2019	PI of three pilot projects on the Dutch supercomputer <i>Cartesius</i> . Total of 1.5 million CPU hours

Computing skills

Scientific codes

I have \gtrsim 10 years of experience with the [MESA](#) stellar and binary evolution code. I also use the rapid population-synthesis codes [binary_c](#) and [COSMIC](#), and I am presently learning to use the (magneto) hydrodynamics code [ATHENA++](#). I was also involved in the development of the open-source supernova explosion code [SNEC](#), and have collaborated on many projects using different software instruments and data analysis tools.

Open source & open science software

I strongly believe in the development of free and open-source code and open-science practices. The output of all the scientific projects I have led are publicly available on [zenodo.org](#) or CDS. I also release publicly the code and input parameters used to make my results fully reproducible. I am involved in the development of the reproducibility software [showyourwork](#).

 github.com/mathren –  bitbucket.org/mrenzo –  gitlab.com/mathren

Programming languages & tools

Proficient:	python, Fortran 90, bash
Basic knowledge:	C/C++, Perl, elisp
Markup:	L ^A T _E X, beamer, org-mode, html, markdown
Operating systems:	Unix, GNU/Linux
Job schedulers:	slurm, condor, pbs

Public Engagement

2023	Math for America workshop with high school teachers on runaway stars
2021	Columbia astro council public talk
2021	Talk at BioBus event at Roosevelt Elementary School
2020	Ask-a-Flatiron-Scientist talk
2019	Astronomy on Tap talk, Leiden
2017	Ask an Astronomer University of Amsterdam Open Day
2017	Informal scientific advisor for science magazine KIJK magazine
2017	Lunar eclipse stargazing night, Pisa
2017	API Stargazing night, Amsterdam
2017	Guest post on astrobites
2009 - 2014	Animator at Ludoteca Scientifica LUS

Professional service & other experiences

- Referee for ApJ, ApJL, A&A, A&AL, MNRAS, MNRASL, Nature Astronomy, Frontiers in Astronomy & Space Science. (total: 21 refereed papers)
- Twice Panelist for grants of the US National Science Foundation (NSF).
- 2023 Scientific Organizing Committee member for the conference [Massive Binaries 2023](#) held in Leuven, Belgium, 17-21 July 2023
- Translator of the book *Guide Pratique pour (Bien) Commencer en Spectroscopie Astronomique* – F. Cochard, EPD Science.
(I translated from French to English this practical guide on spectroscopy for amateur astronomers)
- Member of the “Flatiron Institute Professional Development” committee

Extra-curricular academic training

2020	Introduction to Machine Learning	Flatiron Institute
2019	Presentation skills course	University of Amsterdam
2017	How to effectively supervise	University of Amsterdam
2016	How to master your PhD	University of Amsterdam
2015	Scientific writing	Nova school, Astron
2014	MESA summer school	KITP, UCSB
2013	Gravitational-wave astrophysics School	Caltech
2012	Academic English writing (C1 level)	University of Pisa

Languages

- Mother tongues: Italian and French
- Proficient: English (C1)

References

- Prof. Selma E. de Mink, PhD adviser, sedemink@MPA-Garching.MPG.DE
- Prof. Steven N. Shore, Master thesis adviser, steven.neil.shore@unipi.it
- Prof. Brian D. Metzger, Postdoc mentor, bdm2129@columbia.edu
- Dr. Matteo Cantiello, Postdoc mentor, mcantiello@flatironinstitute.org
- Prof. Will M. Farr, will.farr@stonybrook.edu
- Prof. S. Justham, sjustham@MPA-Garching.MPG.DE

Teaching & Mentoring

Mentored and co-mentored students

2023 - now	Kaila Nathaniel	Rochester Institute of Technology
2023 - now	Camille Landri	Charles Univ. in Prague
2023 - now	Aldana Grichener	Technion
2022 - now	Thomas Wagg	Univ. of Washington
2022 - 2023	Yuta Tarumi	Univ. Tokyo
	moved to industry	
2021 - 2022	Ebrahim Farag	Arizona State Univ.
2021	Ho Sang (Leon) Chan	Chinese Univ. in Hong Kong
2021 - 2022	Nathalia Torres	AstrocomNY summer project

2020 - 2022	Chengcheng Xin	Columbia Univ.
2020	Asmaa Elsayed	AstrocomNY summer project
2019 - 2020	Fraser Evans	University of Leiden
2017 - now	David Hendriks	Master thesis, UvA
	continued as graduate student at Univ. of Surrey	
2017	Max Briel	Bachelor thesis, UvA
	continued as graduate student at Univ. of Auckland	
2016	Floor Broekgaarden	Bachelor thesis, UvA
	continued as graduate student at CfA, Harvard	

Publications led by co-mentored students

- 5 accepted: (Evans *et al.* 2020; Chan *et al.* 2022; Farag *et al.* 2022; Xin *et al.* 2022, Hendriks *et al.* 2023)

Courses

Spring 2025	400A <i>Stellar structure and evolution</i>	University of Arizona
Fall 2024	400A <i>Stellar structure and evolution</i>	University of Arizona

Guest lectures

Feb 2024	<i>The physics of convection</i>	University of Arizona
Nov 2022	<i>Nuclear physics in stars</i>	Columbia Univ.
Mar 2021	<i>Connecting X-ray binaries and GW sources</i>	AstroComNY
Apr 2020	<i>Uncertainties in stellar radii</i>	AstroComNY
Mar 2020	<i>Runaway stars and binary rejuvenation</i>	Harvard
Mar 2019	<i>Last burning phases of massive stars and CCSNe</i>	UvA
Mar 2019	<i>Microphysics of nuclear burning in stars</i>	UvA
Feb 2018	<i>Nuclear reaction networks</i>	UvA
Jun 2017	<i>Population synthesis & runaways</i>	UvA
Jan 2016	<i>Stellar evolution codes</i>	UvA

Teaching assistant & instructor

2018	Simulating stars MESA school	UCAS
2016 - 2018	Open problems in modern astrophysics	UvA
2015	MESA summer school	KITP (UCSB)
2015 - 2016	High energy astrophysics (radiative processes and accretion flows)	UvA

Organized workshops

2014	MESA workshop	Università di Pisa
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Talks & Posters

(Most slides are available [on my website](#))

Colloquia total: 5

Jan 2024	NOIRlab/Steward Observatory joint colloquium, Tucson	USA
Oct 2022	Colloquium, Halifax	Canada
Apr 2021	Hypatia Colloquium, ESO	Virtual
Oct 2019	Colloquium, Nijmegen	Netherlands
Jul 2019	Colloquium, Tübingen	Germany

Invited - Seminars total: 28

Jun 2023	MPA/Kavli summer program in astrophysics	Germany
Mar 2023	CCAPP Seminar, Ohio State University	USA
Feb 2023	Seminar, Stony Brook University, NY	USA

Dec 2022	Seminar, University of Pisa	Italy
Dec 2022	Seminar, Cosmology group Scuola Normale Superiore, Pisa	Italy
Jul 2022	Seminar, Sabanci University, Istanbul	Turkey
Oct 2021	Seminar, University of Indiana	Virtual, USA
Jun 2021	Seminar, University of Pisa	Italy
May 2021	Seminar, UNAM	Virtual, Mexico
May 2021	Seminar, UFRGS Porto Alegre	Virtual, Brazil
Apr 2021	Seminar, University of Sheffield	Virtual, UK
Apr 2021	AEI seminar	Virtual, Germany
Mar 2021	HITS group meeting	Virtual, Germany
Feb 2021	HUJI High Energy Astrophysics seminar	Virtual, Israel
Jan 2021	AAS Journal Author Series	Virtual
Nov 2020	University of Arizona, BigBoom meeting	Virtual, USA
Jun 2020	COMPAS developers meeting	Virtual, Australia
Mar 2019	Seminar, Tübingen	Germany
Jan 2019	ULB seminar, Bruxelles	Belgium
Dec 2018	STScI seminar, Baltimore	USA
Nov 2018	Seminar at Columbia University	USA
Nov 2018	NYU Seminar	USA
Nov 2018	McGill Space Institute Seminar, Montreal	Canada
Nov 2018	Black Board Seminar, CITA, Toronto	Canada
Jul 2018	KIAA seminar, Beijing	China
Jan 2018	Seminar, Università di Pisa	Italy
Jun 2017	Astro tea talk, Caltech	USA
May 2017	Astronomy lunch, UCSB	USA
Nov 2016	Brown bag lunch talk, Università di Pisa	Italy

Invited - Conferences total: 17

Dec 2023	Forging a New Synthesis Between SN Theory and Observation, Princeton	USA
Oct 2023	SNR in complex environment, Leiden	The Netherlands
Jul 2023	3,2,1: triples, binaries, and mergers, Leuven	Belgium
Jul 2023	MPA/Kavli Summer Program in Astrophysics, Munich	Germany
Mar 2023	CCAPP seminar, OSU	USA
Feb 2023	Stony Brook University seminar	USA
Feb 2023	Interacting SNe MIAPbP workshop, Munich	Germany
Dec 2022	University of Pisa seminar	Italy
Dec 2022	Cosmology seminar, Scuola Normale Superiore, Pisa	Italy
Aug 2022	IAU General assembly, High-energy division, Busan	Korea
Jul 2022	ICISE, “Golden Universe”, Quy Nhon	Vietnam
Mar 2022	KITP workshop “Bridging the gap” with R. Farmer	USA
Jul 2021	EAS, the path to become GW sources	Virtual
Sep 2019	Binaries in the Universe Universe of binaries, Telc	Czech Republic
Aug 2019	Massive widowed stars, Stars on the run II, Potsdam	Germany
May 2018	NAC, Groeningen	The Netherlands
Sep 2017	EM signature of BBH mergers, Lorentz Center	The Netherlands

Contributed - Conferences total: 12

Apr 2022	“Growing black holes” conference, Kathmandu	Nepal
Mar 2022	IAU massive star symposium, Cavan county	Ireland
Mar 2021	VFTS Virtual meeting	Virtual
Apr 2018	VFTS meeting, Tenerife	Spain
Sep 2018	A revolution in stellar physics with Gaia and large surveys, Warsaw	Poland
Oct 2017	Nova NW2 meeting	The Netherlands
Aug 2016	Stars on the Run, Bamberg	Germany

Jul 2016	Binaries in Cambridge	UK
May 2016	Netherlands Astronomy Conference - NAC	The Netherlands
May 2016	VFTS meeting, Smolyan	Bulgaria
Sep 2015	Supernovae: The Outliers, MIAPP	Germany
Jul 2014	Theoretical Astrophysics in Southern California	USA

Other talks

Feb 2022	CCA stars & CO group	USA
Jan 2022	CCA stars & CO group	USA
Oct 2021	THEA group meeting, Columbia	USA
Apr 2021	CCA Compact object group meeting	Virtual, USA
Mar 2021	CCA stars meeting	Virtual, USA
Feb 2021	Columbia Pizza talk	Virtual, USA
Jan 2021	CCA Lunch talk	Virtual, USA
Nov 2020	CCA stars meeting	Virtual, USA
Sep 2020	Columbia lunch talk	Virtual, USA
Jul 2020	Columbia lunch talk	Virtual, USA
Mar 2020	CCA lunch talk	Virtual, USA
Feb 2019	Astronomy on Tap, Leiden	The Netherlands
Nov 2018	CCA stars group meeting, New York	USA
Sep 2017	Pizza talk, Amsterdam	The Netherlands
Dec 2016	Pizza talk, Amsterdam	The Netherlands
Nov 2015	Massive Stars group meeting Amsterdam	USA
Apr 2014	Seminar <i>Chaotic Dynamics in the Asteroid Belt</i> , Pisa	Italy

Posters

May 2022	Life and death of massive stars, IAU symposium	Ireland
Apr 2017	Massive stars 17 KITP, UCSB	USA
Jun 2016	Bridging the gap: from massive stars to supernovae	UK

Publications

 0000-0002-6718-9472 –  ADS library –  arXiv –  Google scholar

Summary

(from ADS on March 15, 2024)

- h-index: 25
- Total citations: ≥ 2400
- Normalized citations: ≥ 350
- Total number: 50
- Refereed: 44
- 1st author (leading): 10 + 1 conference proceedings + 1 research note
- 2nd author (major contribution): 11 of which 3 led by co-supervised students
- 3rd author (major contribution): 6

List (Blue boxes highlight top 5 publications), research notes and proceedings are in gray, papers led by co-supervised students in **bold**)

2023

50. N. Britavskiy, **M. Renzo**, Y. Nazé, G. Rauw, P. Vynatheya, *Tracing the evolution of short-period binaries with super-synchronous fast-rotators*, submitted to A&A
49. C. Johnston, M. Michielsen, E. H. Anders, **M. Renzo**, M. Cantiello, P. Marchant, J. A. Goldberg, R. H. D. Townsend, G. Sabhahit, and A. S. Jermyn, *Time-dependent 1D treatment of convective penetration in stellar evolution models*, submitted to ApJ
48. D. D. Hendriks, L. A. C. van Son, **M. Renzo**, R. G. Izzard, R. Farmer. *Pulsational pair-instability supernovae in gravitational-wave and electromagnetic transients*, accepted by MNRAS, [arxiv:2309.09339](https://arxiv.org/abs/2309.09339)
47. R. Farmer, **M. Renzo**, Y. Götberg, E. Bellinger, S. Justham, S. E. de Mink. *Observational predictions for Thorne-Żytkow objects*, submitted to A&A, [arXiv:2305.07337](https://arxiv.org/abs/2305.07337)
46. M. S. Oey, N. Castro, **M. Renzo**, I. Vargas-Salazar, M. W. Suffak, M. Ratajczak, J. D. Monnier, M. K. Szymanski, G. D. Phillips, N. Calvet, A. Chiti, G. Micheva, K. C. Rasmussen, R. H. D. Townsend. *Strong Variability in AzV 493, an Extreme Oe-Type Star in the SMC*, accepted by ApJ, [arXiv:2301.11433](https://arxiv.org/abs/2301.11433)
45. **M. Renzo**, E. Zapartas, S. Justham, K. Breivik, M. Lau, R. Farmer, M. Cantiello, B. D. Metzger, *Rejuvenated accretors have less bound envelopes: Impact of Roche lobe overflow on subsequent common envelope events*, accepted by ApJL, [arXiv:2206.15338](https://arxiv.org/abs/2206.15338)

2022

44. H. Sana, O. Ramirez-Agudelo, V. Hénault-Brunet, L. Mahy, L. Almeida, A. de Koter, J. M. Bestenlehner, C. J. Evans, N. Langer, F. Schneider, P. A. Crowther, S. E. de Mink, A. Herrero, D. J. Lennon, M. Gieles, J. Maíz-Apellániz, **M. Renzo**, E. Sabbi, J. Th. van Loon, J. S. Vink, *Observational evidence for two distinct population of massive runaways in 30 Dor*, accepted by A&AL, [arXiv:2211.13476](https://arxiv.org/abs/2211.13476)
43. L. A. C. van Son, S. E. de Mink, **M. Renzo**, S. Justham, E. Zapartas, K. Breivik, T. Callister, W. M. Farr, and C. Conroy, *No peaks without valleys: The stable mass transfer channel for gravitational-wave sources in light of the neutron star-black hole mass gap*, accepted by ApJ, [arXiv:2209.13609](https://arxiv.org/abs/2209.13609)
42. **E. Farag**, **M. Renzo**, R. Farmer, M. Chidester, F. Timmes, *Resolving The Peak Of The Black Hole Mass Spectrum*, accepted by ApJ, [arXiv:2208.09624](https://arxiv.org/abs/2208.09624)

41. C. Xin, M. Renzo, B. D. Metzger, *Dissecting the microphysics behind the metallicity-dependence of massive stars radii*, accepted by MNRAS, [arXiv:2206.11316](#)
40. T. Temim, P. Slane, J. C. Raymond, D. Patnaude, E. Murray, P. Ghavamian, M. Renzo, T. Jacovich, *SNR G292.0+1.8: A Remnant Of A Low-Mass Progenitor Stripped-Envelope Supernova?*, accepted by ApJ, May 22, [arXiv:2205.01798](#).
39. H. S. Chan, V. A. Villar, S.H. Cheung, S. Ho, A. J. G. O’Grady, M. R. Drout, M. Renzo. *Searching for Anomalies in the ZTF Catalog of Periodic Variable Stars*. accepted by ApJ, Apr. 22, [arXiv:2112.03306](#)
38. M. Renzo, D. D. Hendriks, L. A. C. van Son, R. Farmer. *Pair-instability mass loss for top-down compact object mass calculations*. RNAAS 6:25R, Jan. 2022, [arXiv:2201.10519](#)
2021
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37. E. Zapartas, M. Renzo, T. Fragos, A. Dotter, J. J. Andrews, S. S. Bavera, S. Coughlin, D. Misra, K. Kovelakas, J. Román-Garza, J. G. Serra, Y. Qin, K. A. Rocha, N. H. Tran, and Z. P. Xing. *Revisiting the explodability of single massive star progenitors of stripped-envelope supernovae*. A&A, 656:L19, Dec. 2021, [arXiv:2106.05228](#).
36. E. Zapartas, S. E. de Mink, S. Justham, N. Smith, M. Renzo, and A. de Koter. *Effect of binary evolution on the inferred initial and final core masses of hydrogen-rich, Type II supernova progenitors*. A&A, 645:A6, Jan. 2021, [arXiv:2002.07230](#).
35. D. Vartanyan, E. Laplace, M. Renzo, Y. Götberg, A. Burrows, and S. E. de Mink. *Binary-stripped Stars as Core-collapse Supernovae Progenitors*. ApJL, 916(1):L5, July 2021, [arXiv:2104.03317](#).
34. L. A. C. van Son, S. E. de Mink, T. Callister, S. Justham, M. Renzo, T. Wagg, F. S. Broekgaarden, F. Kummer, R. Pakmor, and I. Mandel. *The redshift evolution of the binary black hole merger rate: a weighty matter*. ApJ, 931:17V, Oct. 2021, [arXiv:2110.01634](#).
33. V. van der Meij, D. Guo, L. Kaper, and M. Renzo. *Confirming NGC 6231 as the parent cluster of the runaway high-mass X-ray binary HD 153919/4U 1700-37 with Gaia DR2*. A&A, 655:A31, Nov. 2021, [arXiv:2108.12918](#).
32. N. Sridhar, B. D. Metzger, P. Beniamini, B. Margalit, M. Renzo, L. Sironi, and K. Kovelakas. *Periodic Fast Radio Bursts from Luminous X-ray Binaries*. ApJ, 917(1):13, Aug. 2021, [arXiv:2102.06138](#).
31. D. M. Siegel, A. Agarwal, J. Barnes, B. D. Metzger, M. Renzo, and V. A. Villar. *“Super-Kilonovae” from Massive Collapsars as Signatures of Black-Hole Birth in the Pair-instability Mass Gap*. accepted by ApJ, Nov. 2021, [arXiv:2111.03094](#).
30. M. Renzo and Y. Götberg. *Evolution of Accretor Stars in Massive Binaries: Broader Implications from Modeling ζ Ophiuchi*. ApJ, 923(2):277, Dec. 2021, [arXiv:2107.10933](#).
29. M. Renzo, T. Callister, K. Chatziioannou, L. A. C. van Son, C. M. F. Mingarelli, M. Cantiello, K. E. S. Ford, B. McKernan, and G. Ashton. *Prospects of Gravitational Wave Detections from Common Envelope Evolution with LISA*. ApJ, 919(2):128, Oct. 2021, [arXiv:2102.00078](#).
28. E. Laplace, S. Justham, M. Renzo, Y. Götberg, R. Farmer, D. Vartanyan, and S. E. de Mink. *Different to the core: The pre-supernova structures of massive single and binary-stripped stars*. A&A, 656:A58, Dec. 2021, [arXiv:2102.05036](#).
27. T. A. Callister, W. M. Farr, and M. Renzo. *State of the Field: Binary Black Hole Natal Kicks and Prospects for Isolated Field Formation after GWTC-2*. ApJ, 920(2):157, Oct. 2021, [arXiv:2011.09570](#).

26. L. A. C. van Son, S. E. De Mink, F. S. Broekgaarden, **M. Renzo**, S. Justham, E. Laplace, J. Morán-Fraile, D. D. Hendriks, and R. Farmer. *Polluting the Pair-instability Mass Gap for Binary Black Holes through Super-Eddington Accretion in Isolated Binaries*. ApJ, 897(1):100, July 2020, [arXiv:2004.05187](#).
25. **M. Renzo** and E. Zapartas. *The explosive life of massive binaries*. Contributions of the Astronomical Observatory Skalnaté Pleso, 50(2):472–480, Mar. 2020, [arXiv:2004.05982](#).
24. **M. Renzo**, R. Farmer, S. Justham, S. E. de Mink, Y. Götberg, and P. Marchant. *Sensitivity of the lower edge of the pair-instability black hole mass gap to the treatment of time-dependent convection*. MNRAS, 493(3):4333–4341, Apr. 2020, [arXiv:2002.08200](#).
23. **M. Renzo**, R. Farmer, S. Justham, Y. Götberg, S. E. de Mink, E. Zapartas, P. Marchant, and N. Smith. *Predictions for the hydrogen-free ejecta of pulsational pair-instability supernovae*. A&A, 640:A56, Aug. 2020, [arXiv:2002.05077](#).
22. **M. Renzo**, M. Cantiello, B. D. Metzger, and Y. F. Jiang. *The Stellar Merger Scenario for Black Holes in the Pair-instability Gap*. ApJL, 904(2):L13, Dec. 2020, [arXiv:2010.00705](#).
21. J. A. P. Law-Smith, R. W. Everson, E. Ramirez-Ruiz, S. E. de Mink, L. A. C. van Son, Y. Götberg, S. Zellmann, A. Vigna-Gómez, **M. Renzo**, S. Wu, S. L. Schröder, R. J. Foley, and T. Hutchinson-Smith. *Successful Common Envelope Ejection and Binary Neutron Star Formation in 3D Hydrodynamics*. submitted to ApJ, Nov. 2020, [arXiv:2011.06630](#).
20. N. Langer, C. Schürmann, K. Stoll, P. Marchant, D. J. Lennon, L. Mahy, S. E. de Mink, M. Quast, W. Riedel, H. Sana, P. Schneider, A. Schootemeijer, C. Wang, L. A. Almeida, J. M. Bestenlehner, J. Bodensteiner, N. Castro, S. Clark, P. A. Crowther, P. Dufton, C. J. Evans, L. Fossati, G. Gräfener, L. Grassitelli, N. Grin, B. Hastings, A. Herrero, A. de Koter, A. Menon, L. Patrick, J. Puls, **M. Renzo**, A. A. C. Sander, F. R. N. Schneider, K. Sen, T. Shenar, S. Simón-Díaz, T. M. Tauris, F. Tramper, J. S. Vink, and X. T. Xu. *Properties of OB star-black hole systems derived from detailed binary evolution models*. A&A, 638:A39, June 2020, [arXiv:1912.09826](#).
19. R. Farmer, **M. Renzo**, S. E. de Mink, M. Fishbach, and S. Justham. *Constraints from Gravitational-wave Detections of Binary Black Hole Mergers on the $^{12}\text{C}(\alpha, \gamma)^{16}\text{O}$ Rate*. ApJL, 902(2):L36, Oct. 2020, [arXiv:2006.06678](#).
18. **F. A. Evans**, **M. Renzo**, and **E. M. Rossi**. *Core-collapse supernovae in binaries as the origin of galactic hyper-runaway stars*. MNRAS, 497(4):5344–5363, Oct. 2020, [arXiv:2006.00849](#).
17. C. Evans, D. Lennon, N. Langer, L. Almeida, E. Bartlett, N. Bastian, J. Bestenlehner, N. Britavskiy, N. Castro, S. Clark, P. Crowther, A. de Koter, S. de Mink, P. Dufton, L. Fossati, M. Garcia, M. Gieles, G. Gräfener, N. Grin, V. Hénault-Brunet, A. Herrero, I. Howarth, R. Izzard, V. Kalari, J. Maíz Apellániz, N. Markova, F. Najarro, L. Patrick, J. Puls, O. Ramírez-Agudelo, **M. Renzo**, C. Sabín-Sanjulián, H. Sana, F. Schneider, A. Schootemeijer, S. Simón-Díaz, S. Smartt, W. Taylor, F. Tramper, J. van Loon, J. Villaseñor, J. S. Vink, and N. Walborn. *The VLT-FLAMES Tarantula Survey*. The Messenger, 181:22–27, Sept. 2020.
- 2019
16. E. Zapartas, S. E. de Mink, S. Justham, N. Smith, A. de Koter, **M. Renzo**, I. Arcavi, R. Farmer, Y. Götberg, and S. Toonen. *The diverse lives of progenitors of hydrogen-rich core-collapse supernovae: the role of binary interaction*. A&A, 631:A5, Nov. 2019, [arXiv:1907.06687](#).

15. **M. Renzo**, E. Zapartas, S. E. de Mink, Y. Götberg, S. Justham, R. J. Farmer, R. G. Izzard, S. Toonen, and H. Sana. *Massive runaway and walkaway stars. A study of the kinematical imprints of the physical processes governing the evolution and explosion of their binary progenitors.* A&A, 624:A66, Apr. 2019, [arXiv:1804.09164](#).
14. **M. Renzo**, S. E. de Mink, D. J. Lennon, I. Platais, R. P. van der Marel, E. Laplace, J. M. Bestenlehner, C. J. Evans, V. Hénault-Brunet, S. Justham, A. de Koter, N. Langer, F. Najarro, F. R. N. Schneider, and J. S. Vink. *Space astrometry of the very massive $\sim 150 M_{\odot}$ candidate runaway star VFTS682.* MNRAS, 482(1):L102–L106, Jan. 2019, [arXiv:1810.05650](#).
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