

Fabian Gittins — Publications

CONTACT INFORMATION Institute for Gravitational and Subatomic Physics
Princetonplein 1, Utrecht University
3584 CC Utrecht, The Netherlands

f.w.r.gittins@uu.nl
fgittins.github.io
+31 6 57 918 906

PUBLICATION SUMMARY Full list of publications can be found on [Google Scholar](#), [INSPIRE-HEP](#) and [NASA ADS](#).

h-index—As of 2025-12-10: 12 (according to Google Scholar), 11 (according to INSPIRE-HEP) or 11 (according to NASA ADS).

Top five cited—Excluding long-author papers. Citation counts from Google Scholar.

1. **Gittins, F.**, Andersson, N., Jones, D. I., *Modelling neutron star mountains*, *Mon. Not. R. Astron. Soc.* **500**, 5570 (2021) [[arXiv:2009.12794](#)]. (72 citations)
2. **Gittins, F.**, Andersson, N., *Modelling neutron star mountains in relativity*, *Mon. Not. R. Astron. Soc.* **507**, 116 (2021) [[arXiv:2105.06493](#)]. (59 citations)
3. **Gittins, F.**, Andersson, N., Pereira, J. P., *Tidal deformations of neutron stars with elastic crusts*, *Phys. Rev. D* **101**, 103025 (2020) [[arXiv:2003.05449](#)]. (47 citations)
4. **Gittins, F.**, Andersson, N., *Tidal deformations of hybrid stars with sharp phase transitions and elastic crusts*, *Astrophys. J.* **895**, 28 (2020) [[arXiv:2003.10781](#)]. (38 citations)
5. **Gittins, F.**, Andersson, N., *Population synthesis of accreting neutron stars emitting gravitational waves*, *Mon. Not. R. Astron. Soc.* **488**, 99 (2019) [[arXiv:1811.00550](#)]. (31 citations)

SUBMITTED PUBLICATIONS [26] Andersson, N., Counsell, A. R., **Gittins, F.**, Ghosh, S., *The tidal response of a relativistic star* [[arXiv:2511.05139](#)].

ACCEPTED PUBLICATIONS [25] Abac, A. *et al.*, *The Science of the Einstein Telescope* [[arXiv:2503.12263](#)].

REFEREED PUBLICATIONS [24] Yin, S., Andersson, N., **Gittins, F.**, *A post-Newtonian approach to neutron star oscillations*, *Class. Quantum Gravity* **42**, 235002 (2025) [[arXiv:2504.06918](#)].

[23] Pnigouras, P., Andersson, N., **Gittins, F.**, Counsell, A. R., *Dynamical neutron star tides: the signature of a mode resonance*, *Mon. Not. R. Astron. Soc.* **542**, 1375 (2025) [[arXiv:2508.06416](#)].

[22] Counsell, A. R., **Gittins, F.** *et al.*, *Interface modes in inspiralling neutron stars: A gravitational-wave probe of first-order phase transitions*, *Phys. Rev. Lett.* **135**, 081402 (2025) [[arXiv:2504.06181](#)].

[21] **Gittins, F.**, Andersson, N., Yin, S., *Perturbation theory for post-Newtonian neutron stars*, *Class. Quantum Gravity* **42**, 135014 (2025) [[arXiv:2503.03345](#)].

[20] **Gittins, F.**, Andersson, N., *Neutron-star seismology with realistic, finite-temperature nuclear matter*, *Phys. Rev. D* **111**, 083024 (2025) [[arXiv:2406.05177](#)].

[19] **Gittins, F.** *et al.*, *Problematic systematics in neutron-star merger simulations*, *Phys. Rev. D* **111**, 023049 (2025) [[arXiv:2409.13468](#)].

- [18] Counsell, A. R., **Gittins, F.** *et al.*, *Neutron star g modes in the relativistic Cowling approximation*, *Mon. Not. R. Astron. Soc.* **536**, 1967 (2025) [[arXiv:2409.20178](#)].
- [17] Counsell, A. R., **Gittins, F.**, Andersson, N., *The impact of nuclear reactions on the neutron-star g-mode spectrum*, *Mon. Not. R. Astron. Soc.* **531**, 1721 (2024) [[arXiv:2310.13586](#)].
- [16] Pnigouras, P., **Gittins, F.**, *et al.*, *The dynamical tides of spinning Newtonian stars*, *Mon. Not. R. Astron. Soc.* **527**, 8409 (2024) [[arXiv:2205.07577](#)].
- [15] Beri, A. *et al.*, *AstroSat and NuSTAR observations of XTE J1739-285 during the 2019-2020 outburst*, *Mon. Not. R. Astron. Soc.* **521**, 5904 (2023) [[arXiv:2303.13085](#)].
- [14] **Gittins, F.** *et al.*, *Modelling Neutron-Star Ocean Dynamics*, *Universe* **9**, 226 (2023) [[arXiv:2304.05413](#)].
- [13] **Gittins, F.**, Andersson, N., *The r-modes of slowly rotating, stratified neutron stars*, *Mon. Not. R. Astron. Soc.* **521**, 3043 (2023) [[arXiv:2212.04892](#)].
- [12] Andersson, N., **Gittins, F.**, *Formulating the r-mode Problem for Slowly Rotating Neutron Stars*, *Astrophys. J.* **945**, 139 (2023) [[arXiv:2212.04837](#)].
- [11] Andersson, N., **Gittins, F.** *et al.*, *Building post-Newtonian neutron stars*, *Class. Quantum Gravity* **40**, 025016 (2023) [[arXiv:2209.05871](#)].
- [10] Riley, J. *et al.*, *Rapid Stellar and Binary Population Synthesis with COMPAS*, *Astrophys. J. Suppl. Ser.* **258**, 34 (2022) [[arXiv:2109.10352](#)].
- [9] **Gittins, F.**, Andersson, N., *Modelling neutron star mountains in relativity*, *Mon. Not. R. Astron. Soc.* **507**, 116 (2021) [[arXiv:2105.06493](#)].
- [8] **Gittins, F.**, Andersson, N., Jones, D. I., *Modelling neutron star mountains*, *Mon. Not. R. Astron. Soc.* **500**, 5570 (2021) [[arXiv:2009.12794](#)].
- [7] **Gittins, F.**, Andersson, N., Pereira, J. P., *Tidal deformations of neutron stars with elastic crusts*, *Phys. Rev. D* **101**, 103025 (2020) [[arXiv:2003.05449](#)].
- [6] **Gittins, F.**, Andersson, N., *Tidal deformations of hybrid stars with sharp phase transitions and elastic crusts*, *Astrophys. J.* **895**, 28 (2020) [[arXiv:2003.10781](#)].
- [5] **Gittins, F.**, Andersson, N., *Population synthesis of accreting neutron stars emitting gravitational waves*, *Mon. Not. R. Astron. Soc.* **488**, 99 (2019) [[arXiv:1811.00550](#)].

WHITE PAPERS

- [4] Dietrich, T. *et al.*, *ESO Expanding Horizon White Paper: Revealing the properties of matter at supranuclear densities with gravitational waves*, [[arXiv:2512.16971](#)].

REVIEW ARTICLES

- [3] **Gittins, F.**, *Gravitational waves from neutron-star mountains*, *Class. Quantum Gravity* **41**, 043001 (2024) [[arXiv:2401.01670](#)].

SOFTWARE ARTICLES

- [2] Riley, J. *et al.*, *COMPAS: A rapid binary population synthesis suite*, *J. Open Source Softw.* **7**, 3838 (2022).

CONFERENCE
PROCEEDINGS

- [1] Thomas, A. Stevenson, E., **Gittins, F.** *et al.*, *Galactic Archaeology with TESS: Prospects for Testing the Star Formation History in the Solar Neighbourhood*, *EPJ Web Conf.* **160**, 05006 (2017) [[arXiv:1610.08862](#)].