

Pierros Ntelis | Curriculum Vitae

Personal Information Born on September 18th, 1990 in Athens, Greece
Greek citizenship



Contact Marseille, France
e-mail: ntelis.pierros-at-gmail.com, mobile: 0033 7 82 34 34 39

Research interests Mathematics, cosmology, theoretical physics, high energy astrophysics, large scale structures - theoretical and observational aspects

Academic Employment 2022-Today **International Bilingual School of Provence**
Mathematics and Physics Teacher for [IB](#), [IGCSE](#)
2018-2023 [Maitre De Conference](#), at Aix-Marseille Univ
2018-2020 **Center of Particle Physics of Marseille, Aix University**
[C.N.E.S. Postdoctoral Research Associate](#)
2014-2017 **Astroparticle and Cosmology Group, Université de Paris**
PhD thesis: [Probing Cosmology with the homogeneity scale of the universe through large scale structure surveys](#), supervised by Dr. J.C. Hamilton
2013 **National Technical University of Athens**
Diploma-Thesis: [Hawking Radiation](#) supervised by Prof.K.Anagnostopoulos, (6 months)
2012 **National Observatory of Athens**
Internship: *Calculation of the age and chemical compositions of star clusters*, supervised by Dr. A. Dapergolas, (2 months)

Education 2014-2017 **Ph.D., Université de Paris, Denis-Diderot**
[Fundamental Physics, Cosmology](#), 1st upper class honours
2013-2014 **M.Sc., University Paris 6, Paris 7, Paris 11**
[Nuclei, Particles, Astroparticles & Cosmology](#), Grade: 14.9/20
2008-2013 **B.A., National Technical University of Athens**
[School of Applied Mathematical & Physical Science](#), Grade: 8.5/10
2002-2008 **Lyceum of kareas, Athens**, Grade: 18.7/20

Languages English (fluent), French (intermediate), Greek (native)

Memberships 05/2024- , [CosmoVerse network](#), [Cosmic WISPer network](#)
06/2025- , [Fundamental challenges in physics theories network](#)
2018-2021, [Euclid Consortium](#), [DESI Survey](#)
2014-2017, [SDSS-III](#), [BOSS Survey](#)

Awards and Fellowships 2024-2025, [2 CosmoVerse STSM grants E-COST-GRANT-CA21136](#), (2 week)
2024-2025, [Cosmic Whispers YRIG grant E-COST-GRANT-CA21106](#), (1 week)
2018-2020, [C.N.E.S. Post Doctoral Fellowship](#), (2+1 years)
2014-2017, [STEP-UP UnivEarth Sciences, PhD Fellowship](#)
2014 , [Paris Denis-Diderot University, Internship Fellowship](#), (2 months)
2013-2014, [Master Award Fellowship, J.S. LATSIS FOUNDATION](#), (1 year)
2012 , [IKY E.S.P.A., Internship Award Fellowship](#), (2 months)

Publications [ArXiv](#), [ADS](#), [I-HEP](#), [RG](#), [Linkedin](#), [COSMOPIT](#), [ORCID](#), [GS](#), [SP](#), [Utube](#)

Interdisciplinary Skills [Maths](#), [efficient communicational skills and learning](#), [data and stat analysis](#), [Mathematical Physics](#), [AI](#), [Python](#), [C/C++](#), [Fortran](#), [Mathematica](#), [L^AT_EX](#), [HPC](#), [Unix/Linux](#), [CAMB](#), [CLASS](#), [COSMOPIT](#), [mangle](#), [Euclid softs](#),

Teaching & Academic Services	<p>2025, Auckland Univ., New Zealand, Advanced Math methods in cosmology, (1h)</p> <p>2025, CPPM, France, Advanced Math methods in cosmology, (1h)</p> <p>2025, New U.U., Uzbekistan, Advanced Math methods in cosmology, (1h)</p> <p>2025, SSM, Napoli, STSM: Tensions and Non-Local Analytical Dynamics, (1w)</p> <p>2024, ISSA, Malta Univ., STSM: (Non-)Riemannian Cosmic Tensions, (1w)</p> <p>2024, Perimeter Institute, Celestial Holography Summerschool participant, (1w)</p> <p>2024, Cosmo From Home, Session host in Dynamical System in Cosmology, (1h)</p> <p>2023, UCO, Benasque, Host in Modifications of Gravity and Higher-order stats, (5h)</p> <p>2023, Cosmo From Home, Session host in Homogeneity, Simulations and LSS, (5h)</p> <p>2022-, IBS, Mathematics and Physics for High School Students, (6×4 h Seminars, 2.5y)</p> <p>2021, Euclid, Science talk: Overview of impact of interlopers on PNG, (1h Seminar)</p> <p>2020, Aix-University, From Horndeski to AofEFT, (40' Seminar)</p> <p>2020, Aix-University, M2 intern supervisor on LSS Diagnostics, (25 hours)</p> <p>2020, Aix-University, M1 intern supervisor on BAO/neutrinos, (3 month)</p> <p>2020, Aix-University, M1 intern reporter on Strong Lensing, (1h exam)</p> <p>2020, Aix-University, M1 intern supervisor on BAO, (1 month)</p> <p>2020, DESI, Participation on spectra Visual Inspection (2 months), (2nd Prize in SR)</p> <p>2019, Aix-University, Homogeneity with Multitracers, (2h Seminar)</p> <p>2019, Aix-University, A note on lss, Summer School, (6h Seminar)</p> <p>2018, Renoir, co-organiser of science meetings "Show Plot Club", (weekly, 3y)</p> <p>2018, LSS survey internal reviewer service (DESI, Euclid) (3y)</p> <p>2018, CPPM, LAM, Participation on QC tests of NISP Euclid instrument, (6 months)</p> <p>2018, Aix-University, Scientific Watch, (6h Seminars)</p> <p>2018, SEMFE, NTUA, Observational Cosmology, (1.5h Seminar)</p> <p>2018, UiO, What can fractality tell us about the universe?, (1h seminar)</p> <p>2018, CPPM, M1 internship supervisor on BAO, (2 months)</p> <p>2018, Aix-University, A note on lss, Summer School, (3h Seminar)</p> <p>2017, SEMFE, NTUA, Exploring cosmic homogeneity, (1.5h Seminar)</p> <p>2016-, Referee Report, MNRAS journal</p> <p>2015, Paris-Denis Diderot, Statistical Methods, (4 months)</p> <p>2014, APC, Paris 7, co-organiser of cosmology journal club, (weekly, 3y)</p>
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Conferences	2025, The Dark Side of the Universe , FAT dynamics to cosmology (25' Talk)
Talks/Posters	2025, Cosmo From Home , Advanced math in cosmology (25' Talk)
	2024, 50 yr of Horndeski at PI , A probabilistic expanding universe under FA , (Poster)
	2024, Cosmo From Home , A probabilistic expanding universe under FA , (25' talk)
	2023, NEB , New avenues of functors of actions theories , (20' Talk)
	2023, Cosmo From Home , New avenues on Functors of Actions , (25' talk)
	2023, NTUA HET , New theories in cosmology and particle physics , (1h Seminar)
	2022, CERN TH DPT Visit , Functors of Actions (5' Blackboard Talk)
	2021, Euclid Science Talk , Overview of impact of interlopers on PNG (1h Talk)
	2020, Atelier D.E. , PNG with interlopers in Euclid , (20' Talk)
	2020, Atelier D.E. , Perturbation Theory of LSS, code: CLASS-PT , (20' Talk)
	2020, SEMFE , NTUA , LSS: Theory and Observations , (40' Seminar)
	2019, 30th SYMPOSIUM , Fractality from Multiple Tracers , (15' Talk)
	2019, Euclid IAS Paris , Systematics on PNG , (20' Talk)
	2019, Euclid Consortium Helnsinki , Primordial Non-Gaussianity , (15' Talk)
	2019, eBOSS/DESI France , Cosmology with Cosmic Homogeneity (15' Talk)
	2018, Euclid GC-WL , Ameliorating cosmology with homogeneity , (15' Talk)
	2018, Colloquium of D.E. , Cosmic Homogeneity as a standard ruler , (20' Talk)
	2018, R. Moriond , Euclid:Homogeneity in search of the Dark Sector , (Poster)
	2017, P.O.N.T. in Cosmology , Is the universe homogeneous? , (20' Talk)
	2016, R. Moriond , The homogeneity scale of the universe , (15' Talk)
	2015, UnivEarthS School , Santorini , LSS and homogeneity , (Poster)
	2015, Advance School of Cosmology at I.C.T.P. , Trieste
	2015, Rencontres de Jeunes Physicienne , Homogeneity (Video) , (15' Talk)
	2015, IDPASC school , at LPNHE , Paris
	2014, Elbereth Conference , IAP , The homogeneity of the universe (15' Talk)
	2014, UnivEarthS School , The homogeneity of the universe , (3' Talk)
Certificates	IB Mathematics: Applications and Interpretations (Equivalent Teaching Certificate for 1 year Undergraduate Courses)

Outreach	2024	, Utube , Introduction cosmology for everyone (1h talk)
Talks	2023('24)	, IBS of Provence , Neuroscience and cosmology for high school students (3h)
	2023	, IBS of Provence , Math and physics from CPT for high school students (3h)
	2022	, IBS of Provence , Mathematics and physics for high school students (3h)
Other Interests		creative writing, piano, guitar, running, water sports, skiing

List of publication and products

Dr. Pierros Ntelis

September 1, 2025

Via, an h-index: 14 and total citations: 2800 ([Google Scholar 2025](#)), my most important work is represented in the following papers:

Refereed

- [1] **Ntelis, P.** 2025. Advancing Tensor Theories. Symmetry: Mathematics: Advances in Topology and Algebraic Geometry. [URL](#) (Citations: 2) ★
- [2] **Ntelis, P.** 2025. Advanced manifold-metric pairs. Mathematics. [URL](#) (Citations: 1) ★
- [3] **Ntelis, P.** & J. L. Said, 2025. Analytical $poly\Lambda$ CDM dynamics. PDU. [URL](#) (Citations: 1) ★
- [4] E.D. Valentino, J. L. Said, ..., **Ntelis, P.** ..., et al. 2025. The CosmoVerse White Paper: Addressing observational tensions in cosmology with systematics and fundamental physics. Contribution: Writing on extended theories of gravity, scientific review, and suggestions. PDU [URL](#) (Citations: 52)
- [5] **Ntelis, P.** & J. L. Said 2025. Exploring ϕ CDM model dynamics. EPJC, arXiv:2502.03486 [URL](#), (Citations: 1)
- [6] **Ntelis, P.** & J. L. Said 2025. Simple $\phi\Lambda$ CDM dynamics. IJGMMP, [URL](#), (Citations: 0)
- [7] Euclid Collaboration, and 1137 colleagues 2024. Euclid. I. Overview of the Euclid mission. A&A, arXiv:2405.13491 [URL](#), (Citations: 144) Contribution: Scientific review
- [8] **Ntelis, P.** & Morris, A. 2023. Functors of actions. Foundations of Physics, arXiv:2010.06707 [URL](#), (Citations: 13) ★
- [9] Göksel Karaçaylı, N., ... **Ntelis, P.** , and 10 colleagues 2022. Optimal 1D Ly α Forest Power Spectrum Estimation – II. KODIAQ, SQUAD & XQ-100. MNRAS [URL](#), (Citations: 30), Contribution: Scientific review and contribution on discussions for further research and software development.
- [10] Hamaus, N., ... **Ntelis, P.** , and 128 colleagues 2022. Euclid: Forecasts from redshift-space distortions and the Alcock-Paczynski test with cosmic voids. A&A arXiv e-prints [URL](#), (Citations: 46), Contribution: Scientific review and contribution on discussions for further research and software development.
- [11] Ilić, S., ... **Ntelis, P.** , and 207 colleagues 2021. *Euclid* preparation: XV. Forecasting cosmological constraints for the *Euclid* and CMB joint analysis. A&A arXiv e-prints [URL](#), (Citations: 34), Contribution: Scientific review and contribution on discussions for further research. ★
- [12] Alam, S., ... **Ntelis, P.** , and 33 colleagues 2020. Towards testing the theory of gravity with DESI: summary statistics, model predictions and future simulation requirements. JCAP [URL](#), (Citations: 55), Contribution: Scientific review and contribution on discussions for further research and software development. ★
- [13] Tutusaus, I., ... **Ntelis, P.** , and 89 colleagues 2020. Euclid: The importance of galaxy clustering and weak lensing cross-correlations within the photometric Euclid survey. Astronomy and Astrophysics 643, [URL](#), (Citations: 48), Contribution: Scientific review and contribution on discussions for further research.
- [14] **Ntelis, P.** , A. Ealet, S. Escoffier, J.-C. Hamilton, A. J. Hawken, J.-M. Le Goff, J. Rich, and A. Tilquin 2018. The scale of cosmic homogeneity as a standard ruler. Journal of Cosmology and Astroparticle Physics 2018, [URL](#), (Citations: 17)

- [15] Blanton, M. R., ... **Ntelis, P.**, and 361 colleagues 2017. Sloan Digital Sky Survey IV: Mapping the Milky Way, Nearby Galaxies, and the Distant Universe. The Astronomical Journal 154, [URL](#), (Citations: 1667), Contribution: Scientific review and contribution on discussions for further research. ★
- [16] **Ntelis, P.**, and 22 colleagues 2017. Exploring cosmic homogeneity with the BOSS DR12 galaxy sample. Journal of Cosmology and Astroparticle Physics 2017, [URL](#), (Citations: 90) ★
- [17] Laurent, P., ... **Ntelis, P.**, and 17 colleagues 2016. A $14 h^{-3} \text{ Gpc}^3$ study of cosmic homogeneity using BOSS DR12 quasar sample. Journal of Cosmology and Astroparticle Physics 2016, [URL](#), (Citations: 71), Contribution: Scientific review and contribution on discussions for further research and software development.

Under review

- [1] S.Casas, ..., **Ntelis, P.**, and 128 colleagues 2023. Euclid: Constraints on f(R) cosmologies from the spectroscopic and photometric primary probes. Submitted in A&A, [URL](#) (Citations: 20) Contribution: Scientific review, software development.
- [2] **Ntelis, P.** 2022. A (D_τ, D_x) -manifold with N -correlators of N_t -objects. arXiv:2209.07472 [URL](#)
- [3] **Ntelis, P.**, et al. 2019. Cosmological constraints from cosmic homogeneity. (Citations: 4) [URL](#)
- [4] **Ntelis, P.** 2025. A probabilistic and expanding Universe. [URL](#), (Citations: 2)
- [5] **Ntelis, P.** 2023. Advancing category and tensor theories. [URL](#), (Citations: 2)
- [6] **Ntelis, P.** 2025. CosmoFATs. [URL](#), (Citations: 2)
- [7] **Ntelis, P.** 2025. A cosmic Schiff's conjecture test. [URL](#), (Citations: 0)
- [8] **Ntelis, P.** 2025. A universal foundational theory. [URL](#), (Citations: 0)

Conferences	2025, The Dark Side of the Universe , FAT dynamics to cosmology (25' Talk)
Talks/Posters	2025, Cosmo From Home , Advanced math in cosmology (Talk)
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	2023, Cosmo From Home , New avenues on Functors of Actions , (25 min talk)
	2023, NTUA HET , New theories in cosmology and particle physics, (1h Seminar)
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	2021, Euclid Science Talk , Overview of impact of interlopers on PNG (1h Talk)
	2020, Atelier D.E. , PNG with interlopers in Euclid , (20' Talk) HVT
	2020, Atelier D.E. , Perturbation Theory of LSS , code: CLASS-PT , (20' Talk)
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	2019, Aix-University , A note on lss, Summer School , (6h Seminar)
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	2018, Colloquium of D.E. , Cosmic Homogeneity as a standard ruler , (20' Talk)
	2018, R. Moriond , Euclid:Homogeneity in search of the Dark Sector , (Poster) HIC
	2018, UiO , What can fractality tell us about the universe? , (1h seminar)
	2017, P.O.N.T. in Cosmology , Is the universe homogeneous? , (20' Talk)
	2016, R. Moriond , The homogeneity scale of the universe , (15' Talk)
	2015, UnivEarthS School , Santorini, LSS and homogeneity , (Poster)
	2015, Rencontres de Jeunes Physicienne , Homogeneity (Video) , (15' Talk)
	2014, Elbereth Conference , IAP , The homogeneity of the universe (15' Talk)
	2014, UnivEarthS School , The homogeneity of the universe , (3' Talk)

Outreach	2025	, Utube , Advanced Manifold-Metric Pairs (10')
	2025	, Utube , A sunny watery magic (33'')
	2025	, Utube , Advanced Euler's identity (3')
	2025	, Utube , Analytical $poly\Lambda$CDM dynamics 101 (5' talk)
	2025	, Utube , Advancing Tensor Theories 101 (10' talk)
	2025	, Utube , Quintessence 101 (5' talk)
	2024	, Utube , Introduction cosmology for everyone (1h talk)
	2023('24)	, IBS of Provence , Neuroscience and cosmology for high school students (3h)
	2023	, IBS of Provence , Math and physics from CPT for high school students (3h)
	2022	, IBS of Provence , Mathematics and physics for high school students (3h)

Software

- [1] P.Ntelis (2017-today): [Github contributions](#)
- [2] P.Ntelis (2017-today): [COSMOPIT](#)
- [3] P.Ntelis (2018-2021): [Gitlab private Euclid softwares](#)
- [4] P.Ntelis (2018): [MCMC-posterior-example](#)
- [5] P.Ntelis (2018): [CoHo](#)
- [6] P.Ntelis (2018): [ANALYSE-SN-magnitude-redshift-curve](#)
- [7] P.Ntelis (2018): [Extract-Cosmology-with-the-BAO-peak-position](#)
- [8] P.Ntelis (2020): [AofEFT](#)
- [9] P.Ntelis (2023): [Tutorial on particle/galaxy simulations and coordinate transformation](#)
- [10] P.Ntelis (2025a): [Standard \$\phi\$ CDM dynamics](#)
- [11] P.Ntelis (2025b): [Simple quintessence dynamics](#)
- [12] P.Ntelis (2025c): [Analytical \$poly\Lambda\$ CDM dynamics](#)