

NTelis

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	2018-Today Independent Researcher 2022-Today International Bilingual School of Provence Mathematics and Physics Teacher for IB , IGCSE 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: <i>Calculation of the age and chemical compositions of star clusters</i> , 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

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Teaching & Academic Services

2025, [CPT at AMU, Marseille](#), Advanced Math methods in cosmology, (1h)
2025, [Auckland Univ., New Zealand](#), [Advanced Math methods in cosmology](#), (1h)
2025, [CPPM, France](#), Advanced Math methods in cosmology, (1h)
2025, [New U.U., Uzbekistan](#), Advanced Math methods in cosmology, (1h)
2025, [SSM, Napoli](#), [STSM: Tensions and Non-Local Analytical Dynamics](#), (1w)
2024, [ISSA, Malta Univ.](#), [STSM: \(Non-\)Riemannian Cosmic Tensions](#), (1w)
2024, [Perimeter Institute](#), [Celestial Holography Summerschool participant](#), (1w)
2024, [Cosmo From Home](#), Session host in [Dynamical System in Cosmology](#), (1h)
2023, [UCO, Benasque](#), Host in [Modifications of Gravity](#) and [Higher-order stats](#), (5h)
2023, [Cosmo From Home](#), Session host in Homogeneity, Simulations and LSS, (5h)
2022-, [IBS](#), [Mathematics and Physics for High School Students](#), (6×4 h Seminars, 2.5y)
2021, [Euclid](#), Science talk: Overview of impact of interlopers on PNG, (1h Seminar)
2020, [Aix-University](#), From Horndeski to AofEFT, (40' Seminar)
2020, [Aix-University](#), M2 intern supervisor on LSS Diagnostics, (25 hours)
2020, [Aix-University](#), M1 intern supervisor on BAO/neutrinos, (3 month)
2020, [Aix-University](#), M1 intern reporter on Strong Lensing, (1h exam)
2020, [Aix-University](#), M1 intern supervisor on BAO, (1 month)
2020, [DESI](#), Participation on spectra Visual Inspection (2 months), (2nd Prize in SR)
2019, [Aix-University](#), [Homogeneity with Multitracers](#), (2h Seminar)
2019, [Aix-University](#), [A note on lss](#), [Summer School](#), (6h Seminar)
2018, [Renoir](#), co-organiser of science meetings "Show Plot Club", (weekly, 3y)
2018, LSS survey internal reviewer service (DESI, Euclid) (3y)
2018, [CPPM](#), [LAM](#), Participation on QC tests of [NISF Euclid instrument](#), (6 months)
2018, [Aix-University](#), Scientific Watch, (6h Seminars)
2018, [SEMFE, NTUA](#), [Observational Cosmology](#), (1.5h Seminar)
2018, [UiO](#), [What can fractality tell us about the universe?](#), (1h seminar)
2018, [CPPM](#), M1 internship supervisor on BAO, (2 months)
2018, [Aix-University](#), [A note on lss](#), [Summer School](#), (3h Seminar)
2017, [SEMFE, NTUA](#), [Exploring cosmic homogeneity](#), (1.5h Seminar)
2016-, Referee Report, MNRAS journal
2015, [Paris-Denis Diderot](#), Statistical Methods, (4 months)
2014, [APC, Paris 7](#), co-organiser of cosmology journal club, (weekly, 3y)

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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	Maitre De Conference , at Aix-Marseille Univ (2018-2023)
	IB Mathematics: Applications and Interpretations
	(Equivalent Teaching Certificate for 1 year Undergraduate Courses)

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Refs. Dr. J.C. Hamilton
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IPNL

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tel.: 00 33 6 42 25 44 00
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List of publication and products

Dr. Pierros Ntelis

October 28, 2025

Via, an h-index: 14 and total citations: 3012 ([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 $\text{poly}\Lambda$ 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: 97)
- [5] **Ntelis, P.** & J. L. Said 2025. Exploring ϕ CDM model dynamics. EPJC, arXiv:2502.03486 [URL](#), (Citations: 4)
- [6] **Ntelis, P.** & J. L. Said 2025. Simple ϕ Λ CDM dynamics. IJGMMP, [URL](#), (Citations: 3)
- [7] Euclid Collaboration, and 1137 colleagues 2024. Euclid. I. Overview of the Euclid mission. A&A, arXiv:2405.13491 [URL](#), (Citations: 277) Contribution: Scientific review
- [8] **Ntelis, P.** & Morris, A. 2023. Functors of actions. Foundations of Physics, arXiv:2010.06707 [URL](#), (Citations: 18) ★
- [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: 54), 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: 82), 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: 74), 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: 57), 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: 78), 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: 23)

- [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: 1984), 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: 101) ★
- [17] Laurent, P., ... **Ntelis, P.**, and 17 colleagues 2016. A $14 \text{ h}^{-3} \text{ Gpc}^3$ study of cosmic homogeneity using BOSS DR12 quasar sample. Journal of Cosmology and Astroparticle Physics 2016, [URL](#), (Citations: 89), 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)

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	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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	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)
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	2016, R. Moriond , The homogeneity scale of the universe , (15' Talk)
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	2014, Elbereth Conference , IAP , The homogeneity of the universe (15' Talk)
	2014, UnivEarthS School , The homogeneity of the universe , (3' Talk)

Outreach	2025	, Utube, Comet 3i ATLAS: Interstellar Halloween Secrets! (6')
	2025	, Utube, Are there Aliens ? Drake's Equation ! (7')
	2025	, Utube, Quantum Tunnelling in Your Palm! (1')
	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](#)