

Pierros Ntelis | Curriculum Vitae

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



Contact Marseille, France
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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: *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, CPT at AMU, Marseille, Advanced Math methods in cosmology, (1h)</p> <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 NISF 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	Maitre de Conference , in Elementary Constituents , Section 29 (2019-2023)
	IB Mathematics: Applications and Interpretations
	(Equivalent Teaching Certificate for 1 year Undergraduate Courses)

Outreach	2024-Today, 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	creative writing, piano, guitar, running, water sports, skiing
Interests	

Refs. [Dr. J.C. Hamilton](#)
[APC](#)
5 Rue Thomas Mann
75013, Paris, France
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[Prof. S. Capozziello](#)
[SSM Institute](#)
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[Prof. Jackson Levi Said](#)
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[EGO](#)
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[INFN](#)
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[Dr. A. Ealet](#)
[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 29, 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 $poly\Lambda$ 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 $\phi\Lambda$ 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 $14 h^{-3} \text{ Gpc}^3$ 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)

Conferences	2025, The Dark Side of the Universe , FAT dynamics to cosmology (25' Talk)
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	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 min talk)
	2023, NEB , New avenues of functors of actions theories , (Talk 20')
	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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	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)
	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 Helsinki , Primordial Non-Gaussianity, (15' Talk)
	2019, eBOSS/DESI France , Cosmology with Cosmic Homogeneity (15' Talk)
	2019, Aix-University , Homogeneity with Multitracers , (2h Seminar)
	2019, Aix-University , A note on lss , Summer School , (6h Seminar)
	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) 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, 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 <i>poly</i>ΛCDM 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](#)