

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: <i>Probing Cosmology with the homogeneity scale of the universe through large scale structure surveys</i> , supervised by Dr. J.C. Hamilton 2013 National Technical University of Athens Diploma-Thesis: <i>Hawking Radiation</i> 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 <i>Fundamental Physics, Cosmology</i> , 1st upper class honours 2013-2014 M.Sc., University Paris 6, Paris 7, Paris 11 <i>Nuclei, Particles, Astroparticles & Cosmology</i> , Grade: 14.9/20 2008-2013 B.A., National Technical University of Athens <i>School of Applied Mathematical & Physical Science</i> , 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 WISPers 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. LATSIDIS 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, LATEX , 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 AoEFT, (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 Iss, 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 intership supervisor on BAO, (2 months)</p> <p>2018 , Aix-University, A note on Iss, 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 Helsinki , 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, <i>LSS and homogeneity</i> , (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 , <i>The homogeneity of the universe</i> , (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 Interests	creative writing, piano, guitar, running, water sports, skiing

Refs.	Dr. J.C. Hamilton APC 5 Rue Thomas Mann 75013, Paris, France tel.: 00 33 1 57 27 69 26 hamilton@apc.in2p3.fr	Prof. Jackson Levi Said UM-ISSA Mathematics and Physics University of Malta, Msida tel.: +35 62 34 03 035 jackson.said@um.edu.mt	Prof. S. Camera INFN via Pietro Giurra, 1 Torino, Italy tel.: 00 39 1 43 87 44 07 stefano.camera@unito.it
	Prof. S. Capozziello SSM Institute Largo S. Marcellino, 10, 80138 Napoli, Naples, Italy tel.: 00 39 329 909 4346 salvatore.capozziello@na.infn.it	Prof. S. Katsanevas EGO Via Amaldi 56021 Santo Stefano a Macerata Cascina (Pisa), Italy tel.: 00 39 0 50 75 23 00 stavros.katsanevas@ego-gw.it	Dr. A. Ealet IPNL 4 Rue Enrico Fermi 69622 Lyon, France tel.: 00 33 6 42 25 44 00 a.ealet@ipnl.in2p3.fr

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 $\text{poly}\Lambda\text{CDM}$ 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 ϕCDM model dynamics. EPJC, arXiv:2502.03486 [URL](#), (Citations: 4)
- [6] **Ntelis, P.** & J. L. Said 2025. Simple $\phi\Lambda\text{CDM}$ 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] Tatusaus, 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)
- 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)
 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)
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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)
 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) HVT
 2020, [Atelier D.E., Perturbation Theory of LSS, code: CLASS-PT](#), (20' Talk)
 2020, [SEMFE, NTUA](#), LSS: Theory and Observations, (40' Seminar)
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 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 $\text{poly}\Lambda\text{CDM}$ 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 \$\text{poly}\Lambda\text{CDM}\$ dynamics](#)