

## Pierros Ntelis | Curriculum Vitae



Personal Information	Born on September 18th, 1990 in Athens, Greece Greek citizenship
Contact	Marseille, France e-mail: <a href="mailto:ntelis.pierros -at- gmail.com">ntelis.pierros -at- gmail.com</a> , 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 <b>Independent Researcher</b> 2022-Today <b>International Bilingual School of Provence</b> Mathematics and Physics Teacher for IB, IGCSE 2018-2020 <b>Center of Particle Physics of Marseille, Aix University</b> C.N.E.S. Postdoctoral Research Associate 2014-2017 <b>Astroparticle and Cosmology Group, Université de Paris</b> 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 <b>National Technical University of Athens</b> Diploma-Thesis: <i>Hawking Radiation</i> supervised by Prof.K.Anagnostopoulos, (6 months) 2012 <b>National Observatory of Athens</b> Internship: <i>Calculation of the age and chemical compositions of star clusters</i> , supervised by Dr. A. Dapergolas, (2 months)
Education	2014-2017 <b>Ph.D., Université de Paris, Denis-Diderot</b> <i>Fundamental Physics, Cosmology</i> , 1st upper class honours 2013-2014 <b>M.Sc., University Paris 6, Paris 7, Paris 11</b> <i>Nuclei, Particles, Astroparticles &amp; Cosmology</i> , Grade: 14.9/20 2008-2013 <b>B.A., National Technical University of Athens</b> <i>School of Applied Mathematical &amp; Physical Science</i> , Grade: 8.5/10 2002-2008 <b>Lyceum of kareas, Athens</b> , Grade: 18.7/20
Languages	English (fluent), French (intermediate), Greek (native)
Memberships	05/2024- , <a href="#">CosmoVerse network</a> , <a href="#">Cosmic WISPers network</a> 06/2025- , <a href="#">Fundamental challenges in physics theories network</a> 2018-2021, <a href="#">Euclid Consortium</a> , <a href="#">DESI Survey</a> 2014-2017, <a href="#">SDSS-III</a> , <a href="#">BOSS Survey</a>
Awards and Fellowships	2024-2025, <a href="#">2 CosmoVerse STSM grants E-COST-GRANT-CA21136</a> , (2 week) 2024-2025, <a href="#">Cosmic Whispers YRIG grant E-COST-GRANT-CA21106</a> , (1 week) 2018-2020, <a href="#">C.N.E.S. Post Doctoral Fellowship</a> , (2+1 years) 2014-2017, <a href="#">STEP-UP UnivEarth Sciences, PhD Fellowship</a> 2014 , <a href="#">Paris Denis-Diderot University, Internship Fellowship</a> , (2 months) 2013-2014, <a href="#">Master Award Fellowship, J.S. LATSIDIS FOUNDATION</a> , (1 year) 2012 , <a href="#">IKY E.S.P.A., Internship Award Fellowship</a> , (2 months)
Publications	<a href="#">ArXiv</a> , <a href="#">ADS</a> , <a href="#">I-HEP</a> , <a href="#">RG</a> , <a href="#">Linkedin</a> , <a href="#">COSMOPIT</a> , <a href="#">ORCID</a> , <a href="#">GS</a> , <a href="#">SP</a> , <a href="#">Utube</a>
Interdisciplinary Skills	Maths, efficient communicational skills and learning, data and stat analysis, Mathematical Physics, AI, Python, C/C++, Fortran, Mathematica, <a href="#">LATEX</a> , <a href="#">HPC</a> , Unix/Linux, <a href="#">CAMB</a> , <a href="#">CLASS</a> , <a href="#">COSMOPIT</a> , mangle, Euclid softs

Teaching & Academic Services	2025, <a href="#">CPT at AMU, Marseille</a> , Advanced Math methods in cosmology, (1h) 2025, <a href="#">Auckland Univ., New Zealand</a> , <a href="#">Advanced Math methods in cosmology</a> , (1h) 2025, <a href="#">CPPM, France</a> , Advanced Math methods in cosmology, (1h) 2025, <a href="#">New U.U., Uzbekistan</a> , Advanced Math methods in cosmology, (1h) 2025, <a href="#">SSM, Napoli</a> , <a href="#">STSM: Tensions and Non-Local Analytical Dynamics</a> , (1w) 2024, <a href="#">ISSA, Malta Univ.</a> , <a href="#">STSM: (Non-)Riemannian Cosmic Tensions</a> , (1w) 2024, <a href="#">Perimeter Institute</a> , <a href="#">Celestial Holography Summerschool participant</a> , (1w) 2024, <a href="#">Cosmo From Home</a> , Session host in <a href="#">Dynamical System in Cosmology</a> , (1h) 2023, <a href="#">UCO</a> , Benasque, Host in <a href="#">Modifications of Gravity and Higher-order stats</a> , (5h) 2023, <a href="#">Cosmo From Home</a> , Session host in Homogeneity, Simulations and LSS, (5h) 2022-, <a href="#">IBS</a> , <a href="#">Mathematics and Physics for High School Students</a> , (6×4 h Seminars, 2.5y) 2021, <a href="#">Euclid</a> , Science talk: Overview of impact of interlopers on PNG, (1h Seminar) 2020, <a href="#">Aix-University</a> , From Horndeski to AoEFT, (40' Seminar) 2020, <a href="#">Aix-University</a> , M2 intern supervisor on LSS Diagnostics, (25 hours) 2020, <a href="#">Aix-University</a> , M1 intern supervisor on BAO/neutrinos, (3 month) 2020, <a href="#">Aix-University</a> , M1 intern reporter on Strong Lensing, (1h exam) 2020, <a href="#">Aix-University</a> , M1 intern supervisor on BAO, (1 month) 2020, <a href="#">DESI</a> , Participation on spectra Visual Inspection ( 2 months), (2nd Prize in SR) 2019, <a href="#">Aix-University</a> , <a href="#">Homogeneity with Multitracers</a> , (2h Seminar) 2019, <a href="#">Aix-University</a> , <a href="#">A note on Iss, Summer School</a> , (6h Seminar) 2018, <a href="#">Renoir</a> , co-organiser of science meetings "Show Plot Club", (weekly, 3y) 2018, LSS survey internal reviewer service (DESI, Euclid) (3y) 2018, <a href="#">CPPM, LAM</a> , Participation on QC tests of <a href="#">NISP Euclid instrument</a> , (6 months) 2018, <a href="#">Aix-University</a> , Scientific Watch, (6h Seminars) 2018, <a href="#">SEMFE, NTUA</a> , <a href="#">Observational Cosmology</a> , (1.5h Seminar) 2018, <a href="#">UiO</a> , <a href="#">What can fractality tell us about the universe?</a> , (1h seminar) 2018, <a href="#">CPPM</a> , M1 intership supervisor on BAO, (2 months) 2018, <a href="#">Aix-University</a> , <a href="#">A note on Iss, Summer School</a> , (3h Seminar) 2017, <a href="#">SEMFE, NTUA</a> , <a href="#">Exploring cosmic homogeneity</a> , (1.5h Seminar) 2016-, Referee Report, MNRAS journal 2015, <a href="#">Paris-Denis Diderot</a> , Statistical Methods, (4 months) 2014, <a href="#">APC, Paris 7</a> , co-organiser of cosmology journal club, (weekly, 3y)
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Conferences	2025, <a href="#">The Dark Side of the Universe, FAT dynamics to cosmology</a> (25' Talk)
Talks/Posters	2025, <a href="#">Cosmo From Home, Advanced math in cosmology</a> (25' Talk)
	2024, <a href="#">50 yr of Horndeski at PI, A probabilistic expanding universe under FA</a> , (Poster)
	2024, <a href="#">Cosmo From Home, A probabilistic expanding universe under FA</a> , (25' talk)
	2023, <a href="#">NEB, New avenues of functors of actions theories</a> , (20' Talk)
	2023, <a href="#">Cosmo From Home, New avenues on Functors of Actions</a> , (25' talk)
	2023, <a href="#">NTUA HET</a> , New theories in cosmology and particle physics, (1h Seminar)
	2022, <a href="#">CERN TH DPT Visit</a> , Functors of Actions (5' Blackboard Talk)
	2021, <a href="#">Euclid Science Talk</a> , Overview of impact of interlopers on PNG (1h Talk)
	2020, <a href="#">Atelier D.E., PNG with interlopers in Euclid</a> , (20' Talk)
	2020, <a href="#">Atelier D.E., Perturbation Theory of LSS, code: CLASS-PT</a> , (20' Talk)
	2020, <a href="#">SEMFE, NTUA</a> , LSS: Theory and Observations, (40' Seminar)
	2019, <a href="#">30th SYMPOSIUM, Fractality from Multiple Tracers</a> , (15' Talk)
	2019, <a href="#">Euclid IAS Paris</a> , Systematics on PNG, (20' Talk)
	2019, <a href="#">Euclid Consortium Helsinki</a> , Primordial Non-Gaussianity, (15' Talk)
	2019, <a href="#">eBOSS/DESI France</a> , Cosmology with Cosmic Homogeneity (15' Talk)
	2018, <a href="#">Euclid GC-WL, Ameliorating cosmology with homogeneity</a> , (15' Talk)
	2018, <a href="#">Colloquium of D.E., Cosmic Homogeneity as a standard ruler</a> , (20' Talk)
	2018, <a href="#">R. Moriond, Euclid:Homogeneity in search of the Dark Sector</a> , (Poster)
	2017, <a href="#">P.O.N.T. in Cosmology, Is the universe homogeneous?</a> , (20' Talk)
	2016, <a href="#">R. Moriond, The homogeneity scale of the universe</a> , (15' Talk)
	2015, <a href="#">UnivEarthS School</a> , Santorini, <i>LSS and homogeneity</i> , (Poster)
	2015, <a href="#">Advance School of Cosmology at I.C.T.P.</a> , Trieste
	2015, <a href="#">Rencontres de Jeunes Physicienne, Homogeneity (Video)</a> , (15' Talk)
	2015, <a href="#">IDPASC school</a> , at LPNHE, Paris
	2014, <a href="#">Elbereth Conference, IAP, The homogeneity of the universe</a> (15' Talk)
	2014, <a href="#">UnivEarthS School</a> , <i>The homogeneity of the universe</i> , (3' Talk)
Certificates	<a href="#">Qualification for the position of « Maitre de conférences »</a> (in section 29 "Elementary Constituents" – CNU) – valid 2019-2023
	IB Mathematics: Applications and Interpretations (Equivalent Teaching Certificate for 1 year Undergraduate Courses)

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

Refs. **Dr. J.C. Hamilton**  
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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  $\text{poly}\Lambda\text{CDM}$  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  $\phi\text{CDM}$  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  $\text{Ly}\alpha$  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  $(D_\tau, D_x)$ -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)
- 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)
- 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)
- 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	, <a href="#">Utube</a> , Comet 3i ATLAS: Interstellar Halloween Secrets! (6')
	2025	, <a href="#">Utube</a> , Are there Aliens ? Drake's Equation ! (7')
	2025	, <a href="#">Utube</a> , Quantum Tunnelling in Your Palm! (1')
	2025	, <a href="#">Utube</a> , Advanced Manifold-Metric Pairs (10')
	2025	, <a href="#">Utube</a> , A sunny watery magic (33")
	2025	, <a href="#">Utube</a> , Advanced Euler's identity (3')
	2025	, <a href="#">Utube</a> , Analytical $poly\Lambda$ CDM dynamics 101 (5' talk)
	2025	, <a href="#">Utube</a> , Advancing Tensor Theories 101 (10' talk)
	2025	, <a href="#">Utube</a> , Quintessence 101 (5' talk)
	2024	, <a href="#">Utube</a> , Introduction cosmology for everyone (1h talk)
	2023('24)	, <a href="#">IBS of Provence</a> , Neuroscience and cosmology for high school students (3h)
	2023	, <a href="#">IBS of Provence</a> , Math and physics from CPT for high school students (3h)
	2022	, <a href="#">IBS of Provence</a> , 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](#)