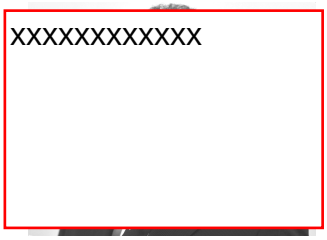
Curriculum vitae

PERSONAL INFORMATION

Andrea Chincarini



Istituto Nazionale di Fisica Nucleare, via Dodecaneso 33, 16146 Genova, Italy

XXXXXXXXXXXXX

Current position Senior researcher, PhD, Istituto Nazionale di Fisica Nucleare - Professor, "Gravitational Waves", Physics Department, University of Genoa (Italy)

Current working level EPR: Level II Researcher and Technologist

Gender Male

WORK EXPERIENCE

2000 – Present

Staff Researcher

Istituto Nazionale di Fisica Nucleare (INFN)
via Dodecaneso 33, 16146 Genova (Italy)

Main activities:

– National Scientific Commission Coordinator
– Research initiative national coordinator, Group leader, Principal Investigator
– Modeling, data analysis expert

Business or sector Institutional Research

1996 – 2000

Surface Analysis scientist

Physical Electronics GmbH
Fraunhoferstraße 4, D-85737 Ismaning (Deutschland)

Main activities:

– technical and analytical help on surface analysis systems (XPS, Auger, Tof-SIMS)
– expertise on analytical systems hardware, vacuum technology, analysis software

Business or sector Research & Development

EDUCATION AND TRAINING

2015 – 2017

PhD - Neuroscience

ISCED 8

Universitá degli Studi di Genova (Italy), Faculty of Medicine
Dissertation title: *From clinics to quantification and back: a tale of amyloid PET*;
Supervisor: Nobili F.M.

1996 – 1998

Specialization in material surface analyses

Physical Electronics Labs (Deutschland)

1995

INFN school of superconductivity

Porto Marghera, Venezia, (Italy)

1994-1995

Research grant

INFN-sponsored technological grant (ref. #5179/94), Genova (Italy)

1990–1994

Master degree in Physics

Universitá degli Studi di Genova (Italy), Faculty of physics,
Dissertation title: *Headways in cavity design through Genetic Algorithms*

RESPONSIBILITIES AND POSITIONS HELD

INFN initiatives

Research management and coordination (summary)

2016–2023 **National Scientific Commission coordinator** - CSN5, Applied and Interdisciplinary physics
2012–2016 **Principal Investigator** 2 research initiatives, CSN5
2007–Present **Unit Manager** / **Group Leader** 4 research initiatives, CSN5 - CSN2
2007–2009 **Scientific responsible** Surface Analysis Laboratory

Competitive calls

EU and National project coordination (summary)

2022–Present **RU Coordinator** Grant "Ricerca Finalizzata 2021", Ministero della Salute
2022–Present **co-PI** PNRR M6C2 POC (Predictive tools for precision medicine in prodromal stages of neurodegeneration)
2022–Present **WP co-Leader** PNRR PE FAIR (Future AI Research)
2022–Present **WP Coordinator** PNRR infrastructure ETIC (Einstein Telescope Infrastructure Consortium)
2019–Present **RU Coordinator** Grant "Ricerca Finalizzata 2018", Ministero della Salute
2019–2020 **PI** VERTIS VV3TT Proof of Concept call
2017–2022 **WG Coordinator** COST action CA17137, A network for Gravitational Waves, Geophysics and Machine Learning
2015–2018 **PI** “PET 2.0 - amyloid imaging”, European Alzheimer’s Disease Consortium
2010–2013 **Partner JRA2** EU project DECIDE, MRI application team

MEMBERSHIPS

Editorial Activity

2016–Present VIRGO EB, Gravitational Waves
2017–2019 Associate editor, Journal of Alzheimer’s Disease

Research Institution & Associations

2017–Present “Neuroimaging Study Group”, Italian Association of Nuclear Medicine (AIMN)
2015–2016 Consulting scientist for *Eli-Lilly* on neuroimaging quantification methods
2010–Present European Alzheimer’s Disease consortium (EADC)

TEACHING EXPERIENCE

University and post-education courses

2018 – Present Physics master degree full course: “Gravitational Waves”
2018 – 2019 Specialization school in Nuclear Medicine: “Data analysis and statistics for biomarkers”
2017 – Present PhD in Physics: "Experimental gravitation"
2015 – Present Specialization school in Medical Physics: “NeuroImaging data analysis”
2015 – 2016 PhD in Neuroscience: “Quantification in medical imaging”
2001 – 2005 Laboratory assistant on the Material Science degree course: "Physics lab. II"

AWARDS

2019 **SmartCUP** competitive call for innovative ideas. Project DORIAN ranked first in the “Life-Science” category
2016 **Gruber Cosmology prize** For the participation in the discovery of Gravitational Waves (`https://gruber.yale.edu/ligo-team-members`)
2016 **Breakthrough prize** Award and donation for work done in fundamental physics (`https://www.breakthroughprize.org`)
2015 **Fondazione Piaggio-Casarsa** Award and donation for work done in physics applied to neurodegenerative studies (Genova, Italy)

PATENTS

2019 Quantifying radiotracer uptake in cerebral tissues with positron emission tomography

Rif. R161 P_19.002_PCT (E0137154) E6737-CV/EURO-PCT N. 20732327.0 (presented on 14/06/2019)

2014 **Computer method for the classification of objects described by n-dimentional matrices**

Patent n. 0001425334 (presented on 01/08/2014, granted on 24/10/2016)

PUBLICATIONS

ID ORCID: 0000-0003-4094-9942 ResercherID: AAB-2028-2022

Indexes	ISI	SCOPUS	(November 24, 2022)
Total Articles	303	330	
Average citations per document	155.1	166.8	
h-index	**78**	**83**	

Books (contribution to)

–	2020	*PET and SPECT in Neurology 2nd edition.*	ISBN 978-3-030-53167-6
–	2017	*Centennial of General Relativity: A Celebration.*	ISBN: 978-9-814-6996-62
–	2014	*PET and SPECT in Neurology*	ISBN: 978-3-642- 54306-7
–	2012	*Computational Modelling of Objects Represented in Images.*	ISBN:978-0415621342
–	2008	*Computational Vision and Medical Image Processing.*	ISBN: 978-94-007-0010-9
–	2003	*Utilisation and reliability of high power proton accelerators.*	ISBN: 9789264102118.

Selection of relevant publications

– *Added value of semiquantitative analysis of brain FDG-PET for the differentiation between MCI-Lewy bodies and MCI due to Alzheimer's disease* 2022 European Journal of Nuclear Medicine and Molecular Imaging, 49 (4), pp. 1263-1274. DOI:10.1007/s00259-021-05568-w

– *Dopaminergic imaging and clinical predictors for phenoconversion of REM sleep behaviour disorder* Brain 2021 Feb 12;144(1):278-287. doi:10.1093/brain/awaa365

– *Probing the Role of a Regional Quantitative Assessment of Amyloid PET* 2021 Journal of Alzheimer's disease : JAD, 80 (1), pp. 383-396. DOI:10.3233/JAD-201156

– *A 3D deep learning model to predict the diagnosis of dementia with Lewy bodies, Alzheimer's disease, and mild cognitive impairment using brain 18F-FDG PET* Eur J Nuclear Medicine and Molecular Imaging, 2021 Jul 30. doi:10.1007/s00259-021-05483-0

– *Diving below the Spin-down Limit: Constraints on Gravitational Waves from the Energetic Young Pulsar PSR J0537-6910* 2021 Astrophysical Journal Letters, 913 (2), art. no. L27, DOI:10.3847/2041-8213/abffcd

– *Associations among education, age, and the dementia with Lewy bodies (DLB) metabolic pattern: A European-DLB consortium project* Alzheimers & Dementia, 2021 Aug;17(8):1277-1286. doi:10.1002/alz.12294

– *Prospects for observing and localizing gravitational-wave transients with Advanced LIGO, Advanced Virgo and KAGRA* 2020 Living Reviews in Relativity, 23 (1), art. no. 3, DOI:10.1007/s41114-020-00026-9

– *Metabolic patterns across core features in dementia with lewy bodies* Annals of Neurology 2019 May;85(5):715-725. doi:10.1002/ana.25453.

– *Head-to-Head Comparison among Semi-Quantification Tools of Brain FDG-PET to Aid the Diagnosis of Prodromal Alzheimer's Disease* 2019 Journal of Alzheimer's Disease, 68 (1), pp. 383-394. DOI:10.3233/JAD-181022

– *Progressive Disintegration of Brain Networking from Normal Aging to Alzheimer Disease: Analysis of Independent Components of 18 F-FDG PET Data* J Nucl Medicine, 2017 Jul;58(7):1132-1139. doi:10.2967/jnumed.116.184309

– *Early identification of MCI converting to AD: a FDG PET study* 2017 European Journal of Nuclear Medicine and Molecular Imaging, 44 (12), pp. 2042-2052. DOI:10.1007/s00259-017-3761-x

– *The impact of automated hippocampal volumetry on diagnostic confidence in patients with suspected Alzheimer's disease: A European Alzheimer's Disease Consortium study* 2017 Alzheimer's and Dementia, 13 (9), pp. 1013-1023. DOI:10.1016/j.jalz.2017.01.019

– *Automated hippocampal segmentation in 3D MRI using random undersampling with boosting algorithm* 2016 Pattern Analysis and Applications, 19 (2), pp. 579-591. DOI:10.1007/s10044-015-0492-0

– *Integrating longitudinal information in hippocampal volume measurements for the early detection of Alzheimer's disease* 2016 NeuroImage, 125, pp. 834-847. DOI:10.1016/j.neuroimage.2015.10.065

- *Multiple RF classifier for the hippocampus segmentation: Method and validation on EADC-ADNI Harmonized Hippocampal Protocol* 2015 Physica Medica, 31 (8), pp. 1085-1091. DOI:10.1016/j.ejmp.2015.08.003
- *Hippocampal unified multi-atlas network (HUMAN): Protocol and scale validation of a novel segmentation tool* 2015 Physics in Medicine and Biology, 60 (22), art. no. 8851, pp. 8851-8867. DOI:10.1088/0031-9155/60/22/8851
- *Predictive Models Based on Support Vector Machines: Whole-Brain versus Regional Analysis of Structural MRI in the Alzheimer's Disease* 2015 Journal of Neuroimaging, 25 (4), pp. 552-563. DOI:10.1111/jon.12163
- *Standardized evaluation of algorithms for computer-aided diagnosis of dementia based on structural MRI: The CADDementia challenge* 2015 NeuroImage, 111, pp. 562-579. DOI:10.1016/j.neuroimage.2015.01.048
- *Feature selection based on machine learning in MRIs for hippocampal segmentation* 2015 Computational and Mathematical Methods in Medicine, 2015, art. no. 814104, DOI:10.1155/2015/814104
- *Volume of interest-based [18F]fluorodeoxyglucose PET discriminates MCI converting to Alzheimer's disease from healthy controls. A European Alzheimer's Disease Consortium (EADC) study* 2015 NeuroImage: Clinical, 7, pp. 34-42. DOI:10.1016/j.nicl.2014.11.007
- *Automated voxel-by-voxel tissue classification for hippocampal segmentation: Methods and validation* 2014 Physica Medica, 30 (8), pp. 878-887. DOI:10.1016/j.ejmp.2014.06.044
- *Automatic temporal lobe atrophy assessment in prodromal AD: Data from the DESCRIPA study* 2014 Alzheimer's and Dementia, 10 (4), pp. 456-467. DOI:10.1016/j.jalz.2013.05.1774
- *Alzheimer's disease markers from structural MRI and FDG-PET brain images* 2012 European Physical Journal Plus, 127 (11), art. no. 135, DOI:10.1140/epjp/i2012-12135-6
- *Local MRI analysis approach in the diagnosis of early and prodromal Alzheimer's disease* 2011 NeuroImage, 58 (2), pp. 469-480. DOI:10.1016/j.neuroimage.2011.05.083
- *Automatic analysis of medial temporal lobe atrophy from structural MRIs for the early assessment of Alzheimer disease* 2009 Medical Physics, 36 (8), pp. 3737-3747. DOI:10.1118/1.3171686
- *Headway in Cavity Design Through Genetic Algorithms* 1995 IEEE Transactions on Magnetics, 31 (3), pp. 1566-1569. DOI:10.1109/20.376330

November 24, 2022

Signature