Personal Information:

Name: **Eirini Tziaferi**
Position: Assistant Professor
Address: University of Democritus, Physics Department, Campus St. Lucas, Kavala, Greece
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Education:

PhD Degree (2007): In Astroparticle Physics with Prof. Neil Spooner, University of Sheffield, UK, Title of PhD thesis: "**Neutron background at the Boulby Underground Laboratory and the DRIFT-IIa directional dark matter detector**"
Bachelor's Degree (2003): Physics, Aristotle University of Thessaloniki, Greece

Previous Research Positions:

- 2014-2025: Post-doctoral Research Associate, University of Athens, Greece. Exp. "**CMS**" (Research Awards/Programs "**Aristia**", "**ELIDEK**, "**NIARCHOS**")
- 2012–2014: Post-doctoral Research Associate, University of Ioannina, Greece. Exp. "**CMS**" (Research Award/Program "**Thalis**" and "**Aristia**")
- 8/2007–2009: Post-doctoral Research Associate, University of Zurich, Switzerland. Exp. "**XENON100**"
- 4/2007–7/2007: Post-doctoral Research Associate, RWTH, Aachen, Germany. Exp. "**XENON100**"

Previous Most Recent Teaching Activities:

- Spring semester 2019: Teaching Associate in the Physics Department of University of Thessaloniki, Greece, for the courses **Elementary Particles II** and **Accelerators and Detectors in High Energy Physics** in the undergraduate program.
- Fall semester 2018: Teaching Associate in the Physics Department of University of Thessaloniki, Greece, for the course **Electrodynamics** in a postgraduate program.
- Spring semester 2017+2018: Teaching Associate in the Polytechnic School of Aristotle University of Thessaloniki, Greece, for the course **Quantum mechanics** in the undergraduate program.

CMS Leadership Positions:

2021 - 2023: "**Jets+X Convener**" of the EXOTICA group of CMS, the largest new physics search group of the experiment.
2017 - 2021: "**Jet Object Contact**" of the EXOTICA group of CMS
2014 - current: **Key/core member of the CMS JETMET group responsible for** the development, tuning, maintenance and documentation of the Particle Flow Jet Identification criteria (**PFJetID**) recommended for use by all CMS analyses.
2019 - current: **Key/core member of the CMS JETMET group responsible for** the development, maintenance and documentation of the **MC truth** Jet Energy Corrections (**JECs**) recommended for use by all CMS analyses.
2014 - current: **Core member of the CMS Dijet Resonance Search**, one of the ~ten "High Priority Analyses" (HPA) in the context of the CMS Exotica physics group, responsible for the optimization, data selection and data-quality and stability studies.
2017 - current: **ARC (Analysis Review Committee) member** for several physics analysis in CMS.

Supervision of graduate students and postdoctoral fellows: **2014-6/2025:**

Informal co-supervisor of seven undergraduate, five master and three postgraduate students in the University of Athens, Physics Department, High Energy and Nuclear Physics Section. Two of them have already defended successfully their PhD thesis.

Selected recent publications with significant contribution:

- CMS Collaboration, EXO-24-038, "*Search for resonant production of pairs of dijet resonances through broad mediators in proton-proton collisions at √s = 13 TeV*" (public document, to be published in a journal soon)
- CMS Collaboration, CMS-DP-2024-028, "*Determination of jet identification criteria with proton-proton collision at √s = 13.6 TeV data collected with the CMS detector at the CERN LHC*",
- CMS Collaboration, EXO-23-004, "*Search for dijet resonances with data scouting in proton-proton collisions at √s = 13 TeV"* (public document, to be published in a journal soon)
- CMS Collaboration, J. High Energy Phys. (JHEP) 2023, 161 (2023), "*Search for resonant and nonresonant production of pairs of dijet resonances in proton-proton collisions at √s = 13 TeV*"
- CMS Collaboration, Journal of Instrumentation (JINST) 15 P 09018 (2020) "*Pile Up mitigation at CMS in 13 TeV data*"
- CMS Collaboration, EXO-19-012, "*Search for high mass dijet resonances with a new background prediction method in proton-proton collisions at √s = 13 TeV with the full Run II data*"
- CMS Collaboration, J. High Energy Phys. (2018) 130, "*Search for dijet resonances in proton-proton collisions at √s = 13 TeV and constraints on dark matter mediators and other new particles"*.

Proceedings papers for conferences:

- **E. Tziaferi** on behalf of the CMS Collaboration, Proceedings of the ICNF 2024, Colymbari, Greece: "*CMS searches for exotic signatures*" CMS CR-2024/086
- **E. Tziaferi** on behalf of the CMS Collaboration, Proceedings of the ICHEP2022, Bologna, Italy: "*Searches in CMS for new physics in final states with jets*" DOI: PoS(ICHEP2022)154 (2022)
- **E.Tziaferi** on behalf of XENON100 Collaboration, Proceedings of the Invisible Universe International Conference 2009, Paris, France: "*The XENON100 experiment*", AIP Conference Proceedings:1241:458-462, 2010, ed. Jean-Michel Alimi and Andre Fuzfa.
- M.Schumann, **E.Tziaferi**, Proceedings of the 4th Patras Axions, WIMPs conference 2008, Hamburg, Germany: "*The XENON100 experiment*" (p83), Verlag Deutsches Elektronen-Synchrotron, ed. A.Lindner, J. Redondo and A.Ringwald.
- **E.Tziaferi** et al., Proceedings of the 6th IDM workshop 2006, Rhodes, Greece: "*First measurement of low intensity fast neutron background from rock at the Boulby Underground Laboratory*", World Scientific, ed. M.Axenides, G.Fanourakis and J.Vergados.

Most Recent Conference Presentations:

- 6/2024: **SUSY2024**: The 31st International Conference on Supersymmetry and Unification of Fundamental Interactions, Madrid
  Plenary Presentation: "*Exotics at CMS*", on behalf of the CMS Collaboration
- 7/2023: **ICNFP2023**, Kolymbari, Crete, Oral Presentation: "*CMS searches for exotic signatures*", on behalf of the CMS Collaboration
- 7/2022: **ICHEP2022**, Bologna, Oral Presentation: "*Searches in CMS for new physics in final states with jets*", on behalf of the CMS Collaboration
- 6/2022: **HEP2022**: Conference on recent developments in HEP and Cosmology, Thessaloniki
  Plenary Presentation: "*CMS searches for new physics in hadronic final states*", on behalf of the CMS Collaboration