

Styliani GOULA

Doctoral Candidate,
Physicist

 Rue Blaise Pascal, Saint-Genis-Pouilly, France 01630

 +30 6986205528

 styliani.goula@cern.ch

 GR Citizenship

Languages

Greek 

English 

Italian 

Interests

-  Nuclear Astrophysics
-  Applied Physics
-  Neutron-induced reactions
-  Semiconductor detectors
-  Detector development
-  Activation Analysis

Top Soft Skills

- Self-discipline
- Organization
- Problem solving

Hobbies

- Cycling
- Skiing
- Trekking
- Climbing
- Traveling
- Cooking
- Reading

Education

Oct. 2022 – present **Doctoral candidate in Experimental Nuclear Physics** University of Ioannina, GR

Diploma Subject: Development of a position-sensitive annular double-sided silicon strip detector (DSSSD), neutron Transmutation-Doped (NTD), devoted to the discrimination of (light) charged-particle.

Oct. 2020 – May 2022 **Master in Experimental Nuclear Physics** University of Ioannina, GR

Master Thesis: Characterization of the neutron beam at NEAR Station at n_TOF/CERN.
Overall grade: 8.97/10.

Oct. 2016 – June 2020 **Bachelor in Physics** University of Ioannina, GR
Overall grade: 7/10.

Participation in Experiments

November 2024 **CERN-INTC-P-629**
Second part of the "Proof-of-Principle" experiment of the annular detector in EAR-2
n_TOF facility, CERN

November 2023 **3-01-710**
Investigation of the pulse shape discrimination capability of nTD Si and SiC detectors
ILL Lohengrin spectrometer, Neutrons for Society, Grenoble, France

September 2023 **CERN-INTC-P-629**
"Proof-of-Principle" experiment of the new annular detector using the $^{12}C(n, cp)$ reactions as bench-marking
n_TOF facility, CERN

July 2023 **IS563 (184Hg) and IS699 (185Hg) experiments at MINIBALL T-REX**
Coulomb excitation of Hg isotopes: Shape coexistence in the neutron-deficient lead region.
ISOLDE, CERN

April 2023 **RF investigation using silicon detectors**
n_TOF facility, CERN

November 2022 **Test of the annular silicon-strip detector in EAR1**
First test of the detector's response to the g-flash.
n_TOF facility, CERN

November 2022 **IS587 at ISOLDE Solenoidal Spectrometer (ISS)**
Characterising excited states in and around the semi-magic nucleus ^{68}Ni using Coulomb excitation and one-neutron transfer.
ISOLDE, CERN

August 2022 **Test of the annular silicon-strip detector in EAR2**
First test of the detector's response to the g-flash.
n_TOF facility, CERN

Participation at research programs

Proposal No. TAA_6_5 ARIEL
Title "Characterization of the new annular n_TOF double-sides silicon strip detector at ILL LOHENGRIN spectrometer"
Spokenperson Nikolas Patronis
My Role Participation on the experiment and data analysis

Proposal No. SV_6_3 ARIEL
Title "Development of the new annular double-sided silicon detector at the CERN n_TOF facility"
Primary Styliani Goula
Investigator

Teaching experience

Oct. 2021 – May 2022	Supervision of two under-graduate students during their Bachelor Thesis working for NEAR Station mainly based on g-spectroscopy analysis and Monte carlo Simulations using GEANT4, n_TOF @ CERN.
July – August 2023	Supervision of a summer student working on the energy calibration of the annular silicon detector, n_TOF @ CERN.

Lab Experience

Doctoral candidate

May 2022 – present	Member of the local team, working with silicon detectors and silicon detection arrays n_TOF facility, CERN for monitoring the neutron beam.
September 2023 – March 2024	Responsible for managing the two silicon-based monitors in both time-of-flight areas n_TOF facility, CERN at n_TOF.
June 2023	Energy calibration of the annular double-sided silicon strip detector. INFN - LNS, Catania
July 2022	Participation in a meeting and visiting the accelerator complex. INFN - LNS, Catania

Master candidate

Sep. 2021 – Nov. 2021	Internship n_TOF facility, CERN Participating in the first multi-foil activation experimental campaign at NEAR Station, taking care of the MAM-1 setup. After the irradiation of 14 samples in the high neutron flux at NEAR Station, the induced activities of the samples were measured using a 26% relative efficiency High Purity Germanium detector (HPGe) detector.
May 2021	Characterization of 3 silicon detectors using a triple-peak alpha source. University of Ioannina, GR

Expertise

Opening systems	Unix/Linux, Windows, macOS
-----------------	----------------------------

Computer Skills

Basic	HTML
Intermediate	PYTHON, BASH, C, C++ (especially for physics applications)
Advanced	L ^A T _E X, Microsoft Office Suite (Word, Excel, PowerPoint)

Scientific Softwares

ROOT (data analysis software) | **GEANT4**, **SRIM/TRIM** (particle transport codes based on Monte-Carlo simulations) | **TALYS** (nuclear reaction model code) | **LISE++** (software for fragment separator simulations) | **InterSpec**, **tv** (spectra- and matrix-analysis program, spectroscopy analysis) | **AtmpTek DPP MCA**, **CAEN Compass**, **Maestro** (data acquisition softwares) | **Origin** (statistical analysis) |

Mathematica (mathematical computation program) | **Sage Mathematical Software System** (mathematics software) | **FreeCAD** (parametric 3D modeler) |

- 2023 - under preparation **Measurement of the neutron flux in the NEAR station at n_TOF by multi-foil activation technique,**
M. Mastromarco, ..., S. Goula, et al., EPJ Techniques and Instrumentation
- May 2023 **The n_TOF NEAR Station Commissioning and first physics case,**
M.E. Stamati, .., S. Goula, et al., EPJ Web of Conferences , 06009 (2023), ND2022.
DOI: <https://doi.org/10.1051/epjconf/202328406009>
- May 2023 **Status report of the n_TOF facility after the 2nd CERN long shutdown period,**
N. Patronis, A. Mengoni, S. Goula, et al., EPJ Techniques and Instrumentation.
DOI: <https://doi.org/10.1140/epjti/s40485-023-00100-w>
- 2022 **Charged particles' detection at n_TOF/CERN: The new annular Double-Sided Silicon Strip Detector,**
S. Goula, et al., HNPS Advances in Nuclear Physics.
DOI: <https://eproceedings.epublishing.ekt.gr/index.php/hnps/article/view/5216/5148>
- 2022 **The CERN n_TOF NEAR station for Astrophysics- and application-related neutron activation measurements,**
N. Patronis, .., S. Goula, et al., European Physical Journal.
DOI: <https://doi.org/10.48550/arXiv.2209.04443>
- 2021 **NEAR at n_TOF/CERN:Preparing the first multi-foil activation measurement,**
S. Goula, et al., HNPS Advances in Nuclear Physics.
DOI: <https://doi.org/10.12681/hnps.3611>

- September 2024 **Pulse Shape analysis using a single-stage silicon detector**
32nd Hellenic Nuclear Physics Society Symposium
Aristotle University of Thessaloniki, Thessaloniki, Greece
- September 2024 **nTD annular silicon detector: Charged-particle detection at n_TOF/CERN**
International Conference Applied Nuclear Physics 2024
Aristotle University of Thessaloniki, Thessaloniki, Greece
- June 2024 **Annular Silicon Detector: Innovative PSD techniques for particle identification utilizing a C-12 target**
The n_TOF Collaboration General & Analysis Meeting
CERN, Geneva, Switzerland
- November 2023 **12C(n, cp) physics cases: Validation of the nTD a-Si prototype using digital PSA**
The n_TOF Collaboration General & Analysis Meeting
Valencia, Spain
- September 2023 **Charged particle spectroscopy using a ring-shaped nTD silicon detector**
31st Hellenic Nuclear Physics Society Symposium
National Technical University of Athens (NTUA), Athens, Greece
- May 2023 **Status and Prospects of the Annular Silicon Detector**
The n_TOF Collaboration General & Analysis Meeting
CERN, Geneva, Switzerland
- December 2022 **Test of the Annular detector for (n, cp) studies**
The n_TOF Collaboration General Meeting
University of Edinburgh, Edinburgh, Scotland
- September 2021 **NEAR at n_TOF/CERN: Preparing the first multi-foil activation measurement**
29th Hellenic Nuclear Physics Society Symposium
NCSR "Demokritos", Athens, Greece
- Poster presentations**
- October 2022 **Charged particles' detection at n_TOF/CERN: The new annular Double-Sided Silicon Strip Detector**
30th Hellenic Nuclear Physics Society Symposium
University of Ioannina, Ioannina, Greece
- Conferences**
- September 2022 **Nuclear Physics in Astrophysics - X Conference**
CERN, Geneva, Switzerland
- Seminars**
- September 2023 **Modern Silicon Sensor Devices and their use in HEP, space and medical applications**
Benedetto Di Ruzza, Foggia University
University of Ioannina, Ioannina, Greece
- April 2021 **Nuclear Astrophysics: Nuclear Physics processes in the Cosmos**
Alberto Mengoni, University of Bologna
University of Ioannina, Ioannina, Greece
- Schools**
- January 2024 **The n_TOF Nuclear Physics Winter School 2024**
CERN, Geneva, Switzerland
- September 2022 **Nuclear Physics in Astrophysics - X School**
CERN, Geneva, Switzerland