PERSONAL INFORMATION

Prof. Assoc. DAFINA XHAKO

RR: “3 Deshmoret”, Tirana, Albania

355 (0)68 33 02768

dafina.xhako@yahoo.com

Sex: Female | Date of birth: 03/03/1984 | Nationality: Albanian

PROFILE

Mrs. **Dafina Xhako** has completed her studies at the University of Tirana at the Faculty of Natural Sciences at the special course of 5-year Physics, from 2002-2007, graduated on 10.07.2007 under the title "Physicist". She has completed second level Master's Degree in **Computational Physics** and has defended the thesis titled "Quark-antiquark Potential in Lattice QCD" on 28/09/2012. She has also completed the third cycle studies in **Computational Physics** at the Faculty of Natural Sciences***, PhD in Physics***, and defended the thesis titled "Accelerating Chiral Fermions with multigrid algorithms in lattice QCD" at the Department of Physics of this faculty on 08/07/2014. She was awarded the title of **Associate Professor** on 25/06/2020. She is board member of AAMP (The Albanian Association of Medical Physics) which is part of EFOMP (The European Federation of Organisations for Medical Physics).

WORK EXPERIENCE

(November 2014 – to present)

Full time Physics Lecturer
In Courses

- **General Physics,**
- **Modern Physics**
- **The Continuum Mechanics for Engineering**
- **Medical Physics and Image Processing**

Department of Physics Engineering , Faculty of Mathematical Engineering and Physics Engineering (FIMIF), Polytechnic University of Tirana,

(Address: RR: “Muhamet Gjollesha”, +355 42257294, http://www.fimif.edu.al)

(October 2010 – July 2013)

Full time Physics Lecturer

Department of Engineering Sciences**,** Faculty of Professional Studies, University "Aleksander Moisiu" Durres

(Address: RR: L.1, Rruga e Currilave, Durrës, 00355 52 239161, http://www.uamd.edu.al)

(October 2010 – to present)

Part time Physics Lecturer

Faculty of Medical Technical Sciences, Medical University of Tirana,

(Address: Rr: “Dibres”, QSUT, http://www.infermieria.info/)

(October 2008 – July 2014)

Part time Physics Lecturer

Department of Physics, Faculty of Natural Sciences, University of Tirana,

(Address: Rr: “Zog I”, www.fshn.edu.al/)

EDUCATION AND TRAINING

(2011 - 2014)

Doctorate in Physics (PhD)

University of Tirana, Faculty of Natural Sciences

(2010 - 2012)

Post Master

University of Tirana, Faculty of Natural Sciences

(2003 - 2007) **Master of Sciences (MSc.)**

University of Tirana, Faculty of Natural Sciences

PERSONAL SKILLS

Mother tongue(s) Albanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C	C	B	B	B
Italian	B	B	B	B	B

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Computer skills

- Very good knowledge of electronics / applicative software
- Very good knowledge of programming languages: Fortran, C ++, Matlab, Octave,
- Very good knowledge of parallel programming in MPI, OpenMPI, Java etc.

ADDITIONAL INFORMATION

Book Author

- Niko Hyka, **Dafina Xhako**, "*Medical Informatics*", INFBOTUES, ISBN 978-9928-173-67-6, Tirana, November 2018.
- Bejo Duka, **Dafina Xhako** , "*Continuum mechanics for engineering*", INFBOTUES, ISBN 978-9928-173-52-2, Tirana 2017.
- **Dafina Xhako**, Eriola Hida, Laboratory in Physics: "*The conservation law of energy (Maxwell wheel)*", for engineering students,Tirana 2018.
- **Dafina Xhako**, Eriola Hida, Laboratory in Physics: "*Uitston-it Bridge in alternative current circuits*", for engineering students, Tirana 2017.

Publications

1. **D. Xhako,** A. Boriçi, "Invertimi i operatorit të mbulimit me anë të algoritmit me dy rrjeta në QCD-në rrjetore", AKTET, Revistë Shkencore e Institutit Alb-Shkenca , Vol. IV, Nr. 3, ISSN 2073-2244 , 2011
2. **D. Xhako,** R. Zeqirllari, A. Boriçi, "Planar Wilson Loops for Deriving Interquark Potential in Lattice QCD ", ANGLISTICUM, , Vol. II, Nr. 5, ISSN 1857-8179, Tetor 2013
3. **D. Xhako,** R. Zeqirllari, A. Boriçi, "Improving the calculation results of lattice spacing from quark potential", AJNTS, Vol IX 2014
4. **D. Xhako,** A. Boriçi, "Fast algorithms for simulating chiral fermions in U(1) lattice gauge theory", AJPA (American Journal of Physics and Application), ISSN: 2330-4308, Vol. 2, No. 2, 2014, pp. 67-72. doi: 10.11648/j.ajpa.20140202.15, 2014.

5. **N.Hyka,** E. Telhaj, D. Xhako, Th.Karaja; "Comparison between different dosimetric tools applications in radiotherapy", Anglisticum Journal (IJLLIS), Volume: 2, Issue 5, fq 230 – 235,. e-ISSN: 1857-1878, p-ISSN: 1857-8179 October 2013

6. **N.Hyka,** E.Spahiu, D. Xhako, P.Malkaj, Th.Karaja; "Linac photon beam calibration using virtual simulator program", Anglisticum Journal (IJLLIS), Volume 2, Issue 4, fq 379-386, e-ISSN: 1857-1878, p-ISSN: 1857-8179 August 2013.

7. **N. Hyka, D. Xhako, Th. Karaja, E. Telhaj: "Calculation Methods in Radiotherapy** Using MATLAB", Journal International Environmental Application Science, ISSN: 1307-0428, May 2014.

8. **Dafina Xhako,** N. Hyka, J. Jani, "*A Method for Determination of Relative Bone Density in Implantology*", publikuar në revistën ndërkombëtare AIP (American Institute of Physics) Conference Proceedings 2075, 170030 (2019); https://doi.org/10.1063/1.5091395, Published Online: 26 February 2019, Published by AIP, eISSN: 1551-7616, indexed in **SCOPUS,** Impact Factor 0.4.

9. **Dafina Xhako,** R, Zeqirllari, "*Chiral fermions algorithms in lattice QCD*" publikuar në revistën ndërkombëtare East European Journal of Physics (East. Eur. J. Phys) Volume 1. 34-39 (2019) DOI:10.26565/2312-4334-2019-1-02, Published Online 26 January 2019 , Published by V.N. Karazin Kharkiv National University, Ukraine, eISSN: 2312-4539, indexed in **Web of Science Group, Clarivate Analytics,** The Current Global Index of the Journal (CGIJ) OAJI -Open Academic Journals Index is 0.2**.**

10. R. Zeqirllari, **Dafina Xhako,** "*Minimally doubled fermions and spontaneous chiral symmetry breaking*", publikuar në revistën ndërkombëtare EPJ (European Physics Journal) Web of Conferences 175, 04002 (2018) https://doi.org/10.1051/epjconf/201817504002 , Published online 26 March 2018, Published by EDP sciences, eISSN: 2100-014X, indexed in **SCOPUS**, Impact Factor **0.35.**

11. R. Zeqirllari, **Dafina Xhako,** "*Preliminary results of the hypercubic symmetry restauration of Boriçi – Creutz fermions in the light hadrons spectrum*", publikuar në revistën ndërkombëtare AIP (American Institute of Physics) Conference Proceedings 2075, 110006 (2019); https://doi.org/10.1063/1.5091257, Published Online: 26 February, 2019, publisher AIP, eISSN: 1551-7616, indexed in **SCOPUS**, Impact Factor **0.4**.

12. N. Hyka, **Dafina Xhako** , "*New Method to Calculate the Tumor Control Probability for PPIR*" , publikuar në revistën ndërkombëtare AIP (American Institute of Physics) Conference Proceedings , AIP Conference Proceedings 2178, 030052 (2019); https://doi.org/10.1063/1.5135450, Published Online: 25 November 2019, Published by AIP, eISSN: 1551-7616, indexed in **SCOPUS**, Impact Factor **0.4.**

13. R. Zeqirllari, **Dafina Xhako**, N. Hyka "*Application* of *Gauss - Lanczos algorithm to determine the low modes density of Dirac operator*" International Journal of Innovative Technology and Interdisciplinary Science , ISSN:2613-7305, Vol 3 No 2 (2020): 443-450

14. **Dafina Xhako,** R. Zeqirllari, "*Simulime te QCD-se rrjetore me FermiQCD"* , Buletini i Shkencave të Natyrës (Online) , ISSN 2305-882X, Nr.25/2018.

15. **Dafina Xhako,** R. Zeqirllari, "*Fenomeni i ngadalësimit kritik në simulimet rrjetore të QCD",* Buletini i Shkencave të Natyrës (Online) , ISSN 2305-882X, Nr.25/2018.

16. **Dafina Xhako,** N. Hyka, R. Zeqirllari "*Algoritmi me dy rrjeta në simulimet e QCD-së rrjetore*" Buletini i Shkencave Teknike, Universitetit Politeknik të Tiranës, 2019, ISSN 05 62 B 945.

17. R.Zeqirllari, **Dafina Xhako** "*Rivendosja e simetrisë hiperkubike tek fermionet Boriçi - Creutz*" Buletini i Shkencave të Natyrës (Online) , ISSN 2305-882X, Nr.26/ 2019.

18. **J.Jani. Dafina Xhako,** N. Hyka, "*Simulation a Solid State Laser Operating in Chaotic Mode*", International Journal of Scientific & Technology Research (IJSTR)…….in press, ISSN 2277-8616, indexed in SCOPUS, Impact Factor**: 3.023**

Conferences

1. **D. Xhako**, R.Zeqirllari, A. Boriçi:"Quark-antiquark potential from LatticeQCD", Ovidius, Constanta, Rumania , ISBN: 978-606-598-181-2, 2012.

2. **D.Xhako**, R.Zeqirllari, A. Boriçi, "Using Parallel Computing to Calculate Static Interquark Potential in LQCD", "HP-SEE User Forum", Beograd, Serbi, proceedings ,"High Performance Computing Infrastructure for South East Europe's Research Communities-Results of the HP-SEE User Forum 2012", "Modeling and Optimization in Science and Technologies", Vol.2, Springer, ISSN 2196-7334, ISBN 978-3-319-01520-0, 2012.

3. **D.Xhako,** R.Zeqirllari, A. Boriçi, "Potenciali kuark-antikuark nga laqet e Wilsonit në QCD-në rrjetore" "Në 100 vjetorin e shpalljes së pavarësisë" FSHN,UT, Nr.15, 2013, ISSN 2305-882X, 2012.

4. **D.Xhako**, R.Zeqirllari, A. Boriçi, "Improving the Calculation Method of Quark-Antiquark Potential from Fermiqcd", Shkodra University "Research and Education – ICRAE 2013", ISSN: 2308 – 0825, Maj 2013.

5. **D.Xhako**, R. Zeqirllari, A. Boriçi, "Determining the scale from string tension in lattice QCD" Shkodra University, "Research and Education in Natural Sciences", proceedings, Vol.I, ISBN 978-9928-4135-5-0, 2013.

6. R.Zeqirllari, **D.Xhako**, A. Boriçi:"Light Mass Spectroscopy from LatticeQCD", Ovidius, Constanta, Rumania, proceedings ISBN: 978-606-598-181-2, 2012.

7. R.Zeqirllari**, D.Xhako**, A. Boriçi, "Quenched hadron spectroscopy using Fermiqcd "HP-SEE User Forum" të organizuar nga projekti HP-SEE, Beograd, Serbi ,"High Performance Computing Infrastructure for South East Europe's Research Communities-Results of the HP-SEE User Forum 2012" in "Modeling and Optimization in Science and Technologies", Vol.2, Springer, ISSN 2196-7334, ISBN 978-3-319-01520-0, 2012.

8. N.Hyka, A.Xhumari, E.Telhaj, Th. Karaja**, D.Xhako**, "Intensity Modulated Radiation Therapy (IMRT) in Albania"; konferenca ndërkombëtare - Towards future Sustainable Develpment; pg 77, ISBN: 978-9928-4135-05, Nëntor 2012.

9. N.Hyka, E.Telhaj, Th.Karaja, **D.Xhako**; "Oncor prescision açelerator beam data commissioning, equipment and procedures"; Shkodra Univeristy "Research and Education – ICRAE 2013"; ISSN: 2308 – 0825, 2013.

10. N. Hyka, E. Telhaj, **D. Xhako**, Th. Karaja; "Calculation methods in radiotherapy using MATLAB", Shkodra University, "Research and Education in Natural Sciences", proceedings , Vol.I, ISBN 978-9928-4135-5-0, 2013.

11. **Dafina Xhako,** A. Boriçi, "*Accelerating simulations in lattice QCD with GMRESR algorithm*", konferenca ndërkombëtare "IPCT2015 International Physics Conference Tirana 2015", 13-15 Nëntor 2015, Fakulteti i Shkencave te Natyrës, Universiteti i Tiranës,Tiranë, Libri i Proocedings ISBN: 992842178-1.

12. **Dafina Xhako**, R. Zeqirllari, "*Fast algorithms for chiral fermions in 2 dimensions*"**,** The 35th International Symposium on Lattice Field Theory, Sunday 18 June 2017 - Saturday 24 June 2017 , Granada, Spain, Proceedings in Journal EPJ Web of Conferences **175**, 14005 (2018) https://doi.org/10.1051/epjconf/201817514005, Published online 26 March 2018, eISSN: 2100-014X

13. **Dafina Xhako**, N.Hyka, "*Developing numerical methods and simulations for trainings in radiotherapy",* The XXVIII International Scientific Conference, May 31 – June 1, 2018, Union Of Scientists –Stara Zagora, Bulgary, Proceedings në Revisten "Science & Technologies (Online)" , Volume VIII, 2018, Number 2: NAUTICAL AND ENVIRONMENTAL STUDIES, ISSN 1314 4111.

14. **Dafina Xhako**, R, Zeqirllari, "*Interquark potential with QCDLAB2 in lattice QCD"* The XXVIII International Scientific Conference, May 31 – June 1, 2018, Union Of Scientists –Stara Zagora, Bulgary, Proceedings në Revisten "Science & Technologies (Online)" , Volume VIII, 2018, Number 2: NAUTICAL AND ENVIRONMENTAL STUDIES, ISSN 1314 4111.

15. **Dafina Xhako,** R. Zeqirllari, J.Jani, "*The Physical Scale from String Tension in LQCD*"**,** The 10th Jubilee Conference of the Balkan Physical Union, BPU10 – August 2018, Bulgary. Proceedings in AIP

Conference Proceedings **2075**, 110002 (2019); https://doi.org/10.1063/1.5091253, Published Online: 26 February 2019, eISSN: 1551-7616

16. **Dafina Xhako**, N. Hyka "*Medical image prediction using artificial neural networks*" , The 35th Turkish Physical Society – International Physics Congress, TPS35 – September 4-8, 2019, Bodrum Turkey, Proceedings in AIP Conference Proceedings 2178, 030053 (2019); https://doi.org/10.1063/1.5135451, Published Online: 25 November 2019, eISSN: 1551-7616.

17. N.Hyka, **Dafina Xhako** " *Playing a Game to Evaluate Teaching, Learning and Outcomes in a University*"" 14th International Conference in "STANDARDIZATION, PROTYPES AND QUALITY: A MEANS OF BALKAN COUNTRIES' COLLABORATION", September 21 - 22, 2018, Tirana, Albania, Proceedings **ISBN:** 978-9928-127-95-2

Training and Workshops

- **October 2018** Participant in International Workshop III International Workshop on recent LHC results and related topics, Tirana, Albania 10-12 October 2018 with presantation *Chiral fermions algorithms in QCDLAB2*
- **September 2016**, Participant in International Workshop Second International Workshop on recent LHC results and related topics, Tirana, Albania 26-27 September 2016 with presantation Fast algorithms for chiral fermions.
- **November 2013,** Training- (International Centre for Theoretical Physics) 25 November - 6 December 2013, Italy
- **September 2010 – October 2013** → Participant as partnership in project HP-SEE (High-Performance Computing Infrastructure for South East Europe's Research Communities) with project named "HMLQCD" (Hadron Masses from Lattice QCD)
- **June 2013** - "Monte Carlo methods and data analysis in lattice QCD", Regensburg, Germany, 24-27 June 2013.
- **May 2013**- training "HP-SEE and parallel systems in Albania" UPT, Tirana
- **October 2012**- participating in workshop LHC (Large Hadron Collider), 8-9 October, Tirana, Albania
- **June 2012**- participating in workshop UT-FSHN" "Numerical Methods and Parallel computing Using MPI"
- **May 2012**, participating Sarajevo School of High Energy Physics 2012, Sarajevo
- **March 2012**, participating in HP-SEE, "HP-SEE Third Training" UPT, Tirana
- **November 2011**, participating in HP-SEE "HP-SEE Second Dissemination and Training" UPT, Tirana
- **September 2011**, participating in Helmholtz International Summer School, Dubna, Russia.
- **June 2011**, participating in Joint HP-SE, LinkSCEEm-2 and PRACE, HPC Summer Training, Athens, Greece.
- **January 2011**, participating in PRACE/LinkSCEEM-2 2011 Winter School, 24-27 January, Nicosia CaStoRc Cyprus.
- **April 2009** - participating in activity "From Galileo to us", QASH