

# Giannis Koutsou

## Curriculum Vitae

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Assistant Professor,  
Computation-based Science and Technology  
Research Center (CaSToRC),  
The Cyprus Institute

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## Academic Positions

2013 - present	Assistant Professor	CaSToRC, The Cyprus Institute
2011 - 2013	Associate Research Scientist	CaSToRC, The Cyprus Institute
2008 - 2011	Postdoctoral Researcher	University of Wuppertal
	Guest Scientist	Jülich Supercomputing Center

## Education

2004 - 2008	PhD Theoretical Physics, thesis title <i>"Hadron form factors and hadron deformation from lattice QCD"</i>	University of Cyprus
2000 - 2004	BSc Physics	University of Cyprus

## Research Experience

- Computational strong interaction physics
- Lattice Quantum Chromodynamics
- High Performance Computing and novel computing architectures

## Teaching and supervision

### Graduate courses

Developed and delivered courses under the Computational Sciences (CoS) doctoral program and Simulation and Data Science (SDS) MSc program of the Cyprus Institute. Courses developed and taught:

**CoS501** *“Frontriers in High Performance Computing”*, a mandatory course which includes introduction to high performance computing, computer architectures, parallel scientific code development, and scientific software optimization

**CoS502** *“Frontriers in Numerical Methods”*, a mandatory course which includes numerical solution of partial differential equations, Monte Carlo methods, and iterative methods for solving large systems of equations

**CoS504** *“Computational Physics”*, an elective course on computational methods for studying physical systems, including statistical systems (Ising model and variants), quantum-mechanical systems (e.g. the quantum harmonic oscillator), and quantum field theories (e.g. U(1) theory, Schwinger model)

**SDS402** *“Introduction to High Performance Computing”*, a mandatory course which includes introduction to parallel programming and high performance computing, parallel scientific code development, and scientific software optimization

### **Supervision of graduate students, research assistants, and postdoctoral researchers**

#### PhD students

1. Srijit Paul, Marie Skłodowska Curie fellow under “HPC-LEAP” European Joint Doctorate program, graduated summer 2019 (The Cyprus Institute and University of Wuppertal)

#### Co-supervised, within European Joint Doctorate programs

2. Viacheslav Bolnykh, Marie Skłodowska Curie fellow under “HPC-LEAP” European Joint Doctorate program, successfully defended September 2019 (The Cyprus Institute and RWTH Aachen)

#### Ongoing PhD candidates

3. Davide Nolè, Marie Skłodowska Curie fellow under “STIMULATE” European Joint Doctorate program, in first year (The Cyprus Institute and University of Wuppertal)

#### Supervision of research assistants (RAs)

1. Andreas Diavastos, RA under *GPU Clusterware* project. Currently Postdoctoral Research Fellow, National University of Singapore
2. Christos Kallidonis, RA under *GPU Clusterware* project. Currently Postdoctoral Research Associate, College of William & Mary
3. Kyriakos Hadjiyiannakou, RA under *GPU Clusterware* project. Currently Postdoctoral Fellow, University of Cyprus

#### Supervision of postdoctoral researchers

1. Ferenc Pittler, Postdoctoral researcher currently under *NextQCD* project

## External funding and projects

### FAST

*Ongoing, started: November 2019*

*PI of the project "Future proofing scientific applications for the supercomputers of tomorrow"*

- ◇ €180,000, Grant funded under the "Complimentary Funding" program of the Research and Innovation Foundation (RIF), for complementing the participation of Cyprus-based researchers in H2020 programs
- ◇ Employment of researchers for exploring next-generation scientific applications, from applications on Exascale architectures to Quantum Computers

### NextQCD

*Ongoing, started: October 2019*

*PI of the project "New Physics Insights from Exascale Simulations of QCD"*

- ◇ €250,000 from Cyprus' Research and Innovation Foundation (RIF)
- ◇ Employment of Postdoctoral researcher and PhD students for developing lattice QCD applications on next-generation computer hardware and for the calculation of nucleon structure observables to high precision

### GPU Clusterware

*Spring 2013 - Fall 2015*

*PI of the GPU Clusterware project,*

- ◇ €150,000 from Cyprus' Research Promotion Foundation (RPF)
- ◇ Employment of Research Assistants and Research Scientists for evaluation of novel computing architectures for scientific applications

### As contributor

- Contributor to "HPC-LEAP" and "STIMULATE" European Joint Doctorates. Funding for two PhD students as primary supervisor
- Contributor to various tasks of the **Partnership for Advanced Computing in Europe** (PRACE), in supporting community scientific codes and prototyping of new computer technologies for scientific applications

## Memberships and service

### Member Extended Twisted Mass Collaborations (ETMC)

*Member of the research collaboration ETMC*

Collaboration spokesperson: Dr. Karl Jansen, DESY - Zeuthen, Germany,

website: <http://www-zeuthen.desy.de/~kjansen/etmc/>

### Leading Member Joint Simulation Laboratory

*Joint SimLab with JSC and DESY - Zeuthen*

Community code support and organization of training events (Lattice Practices)

website: <http://www.cyi.ac.cy/castorc/castorc-research-themes/simulation-lab.html>

**Member Partnership for Advanced Computing in Europe (PRACE)**  
 Contributor to PRACE 1<sup>st</sup> to 6<sup>th</sup> implementation phases (IP)  
 Contributor to PRACE prototyping activities, including task lead and co-lead  
 website: <http://www.prace-project.eu/>

**Reviewer**

- Physical Review Letters
- Physical Review D
- European Physical Journal A
- Few-Body Systems

## Management and administration

Fall 2019 - present    **Quality Assurance committee**  
*Committee for assuring alignment of the quality assurance standards of the Graduate School of the Cyprus Institute with the regulations of the relevant bodies of the Government of Cyprus.*

Fall 2019 - present    **Administrative committee**  
*Pertaining to administrative matters of the Graduate School of the Cyprus Institute.*

Fall 2013 - present    **Computational Sciences graduate program**  
*Deputy coordinator of the Computational Sciences graduate program of the Cyprus Institute*

Fall 2013 - present    **Technical Evaluation committees for infrastructure procurements**  
*Member of several evaluation committees for public procurement of computing infrastructure up to €1 Mi*

Fall 2016 - Fall 2019    **Office IT committee of the Cyprus Institute**  
*Member of committee drafting policies and advising on use of office IT equipment and software*

Fall 2013 - Fall 2016    **Erasmus committee of the Cyprus Institute**  
*Member of committee reviewing candidates for Erasmus exchanges*

Fall 2013 - Fall 2014    **Academic committee of the Cyprus Institute graduate school**  
*Member of Academic committee*

Fall 2013 - Fall 2014    **Admissions committee of the Cyprus Institute graduate school**  
*Member of Admissions committee*

## Fellowships and awards

- 2005 - 2008            **Cyprus Research Promotion Foundation**  
*Competitive nationally awarded grant for PhD studies (ΠΕΝΕΚ program)*  
*from the national funding agency of Cyprus*
- 2004                    **University of Cyprus** – final year prize  
*Awarded as one of top two Physics BSc graduates*

## Invited talks and lectures

- 2019    **“Overview of lattice results on nucleon moments”**, invited parallel talk, International conference on Electromagnetic Interactions in Nucleons and Nuclei (EINN) 2019, 27<sup>th</sup> October - 2<sup>nd</sup> November 2019, Paphos, Cyprus
- 2019    **“Nucleon structure from lattice Quantum Chromodynamics”**, invited seminar, Temple University, 3<sup>rd</sup> September 2019, Philadelphia, PA
- 2019    **“Nucleon Matrix Element Results from the Extended Twisted Mass Collaboration”**, invited talk, Santa Fe workshop on lattice QCD, 26<sup>th</sup> - 30<sup>th</sup> August 2019, Santa Fe, NM
- 2018    **“Form Factors and Moments of Nucleon PDFs From Lattice QCD”**, invited talk, ECT\* workshop titled: Mapping Parton Distribution Amplitudes and Functions, 10<sup>th</sup> September 2018, ECT\*, Trento, Italy
- 2018    **“Nucleon structure from lattice QCD”**, invited talk, 8<sup>th</sup> international conference on Physics Opportunities at an Electron-Ion Collider (POETIC) 2018, 19<sup>th</sup> March 2018, Regensburg, Germany
- 2017    **“Spin structure of the nucleon”**, invited parallel talk, International conference on Electromagnetic Interactions in Nucleons and Nuclei (EINN) 2017, 1st November 2017, Paphos, Cyprus
- 2017    **“Nucleon and  $\Delta$  structure results from lattice QCD”**, invited parallel talk (given remotely) at the 11<sup>th</sup> International Workshop on the Physics of Excited Nucleons (NSTAR) 2017, 20<sup>th</sup> to 23<sup>rd</sup> August 2017, Columbia, SC, USA
- 2017    **“Nucleon structure and dynamics from lattice QCD”**, invited plenary talk at the Electron Ion Collider User Group Meeting (EICUG) 2017, 20<sup>th</sup> July 2017, Trieste, Italy
- 2017    **“Disconnected loops”**, invited talk at the workshop titled: Lattice QCD at the physical pion mass: results, challenges and modern techniques, 11<sup>th</sup> April 2017, DESY-Zeuthen, Germany

- 2016 **“Quark and gluon contributions to the spin and momentum of the nucleon from lattice QCD”**, invited parallel talk at the 7<sup>th</sup> international conference on Physics Opportunities at an Electron-Ion Collider (POETIC) 2016, 14<sup>th</sup> to 18<sup>th</sup> November 2016, Temple University, PA, US
- 2016 **“Nucleon structure and the neutron Electric Dipole Moment from twisted mass lattice QCD”** invited plenary talk at LightCone 2016 Conference, 5<sup>th</sup> to 8<sup>th</sup> September 2016, IST, University of Lisbon, Lisbon, Portugal
- 2016 **“Tensor charge from lattice QCD”** invited talk at the ECT\* workshop titled: Parton TMDs at large x: a window into parton dynamics in nucleon structure within QCD, 11<sup>th</sup> to 15<sup>th</sup> April 2016, ECT\*, Trento, Italy
- 2015 **“Review of hadron structure from lattice QCD”**, invited plenary talk, International conference on Electromagnetic Interactions in Nucleons and Nuclei (EINN) 2015, 3<sup>rd</sup> - 7<sup>th</sup> November 2015, Paphos, Cyprus
- 2015 **“Revealing the structure of matter using large scale simulations”**, invited talk at the 2<sup>nd</sup> Workshop on Scientific Applications of Computing, 27<sup>th</sup> November 2015, Nicosia, Cyprus
- 2015 **“Optimization and performance modeling”**, invited lecture and hands-on tutorial at Lattice Practices 2015, 14<sup>th</sup> - 16<sup>th</sup> October 2015, Jülich, Germany
- 2015 **“Nucleon structure from lattice QCD”**, invited talk at the 6<sup>th</sup> Workshop of the APS Topical Group on Hadronic Physics, 8<sup>th</sup> - 10<sup>th</sup> April 2015, Baltimore, MD, USA
- 2014 **“Optimization”**, lecture and hands-on tutorial at Lattice Practices, 5<sup>th</sup> - 7<sup>th</sup> March 2014, DESY-Zeuthen, Germany
- 2013 **“Hadronic structure from lattice QCD”** invited talk at the International Conference on Scientific Computing (CSC) 2013, 11<sup>th</sup> - 14<sup>th</sup> December 2013, Paphos, Cyprus
- 2013 **“Introduction to hadron structure from lattice QCD”** invited lecture at the International conference on Electromagnetic Interactions in Nucleons and Nuclei (EINN) 2013, 28<sup>th</sup> October - 2<sup>nd</sup> November 2013, Paphos, Cyprus
- 2013 **“Optimization for Intel architectures”**, lecture and hands-on tutorial at Lattice Practices 2012, 10<sup>th</sup> - 12<sup>th</sup> October 2012, DESY-Zeuthen, Germany

## Publications

### Peer-reviewed publications

1. **“Nucleon strange electromagnetic form factors”**. By C. Alexandrou, S. Bacchio, M. Constantinou, J. Finkenrath, K. Hadjiyiannakou, K. Jansen, and G. Koutsou. In: *Phys.*

- Rev. D*101.3 (2020), p. 031501. DOI: 10.1103/PhysRevD.101.031501. arXiv: 1909.10744 [hep-lat]
2. **“Moments of nucleon generalized parton distributions from lattice QCD simulations at physical pion mass”**. By C. Alexandrou et al. In: *Phys. Rev. D*101.3 (2020), p. 034519. DOI: 10.1103/PhysRevD.101.034519. arXiv: 1908.10706 [hep-lat]
  3. **“Proton and neutron electromagnetic form factors from lattice QCD”**. by C. Alexandrou, S. Bacchio, M. Constantinou, J. Finkenrath, K. Hadjiyiannakou, K. Jansen, G. Koutsou, and A. Vaquero Aviles-Casco. In: *Phys. Rev. D*100.1 (2019), p. 014509. DOI: 10.1103/PhysRevD.100.014509. arXiv: 1812.10311 [hep-lat]
  4. **“ $\langle x \rangle$  and  $\langle x^2 \rangle$  of the pion PDF from Lattice QCD with  $N_f = 2+1+1$  dynamical quark flavours”**. By M. Oehm, C. Alexandrou, M. Constantinou, K. Jansen, G. Koutsou, B. Kostrzewa, F. Steffens, C. Urbach, and S. Zafeiropoulos. In: (2018). arXiv: 1810.09743 [hep-lat]
  5. **“Simulating twisted mass fermions at physical light, strange and charm quark masses”**. By C. Alexandrou et al. In: *Phys. Rev. D*98.5 (2018), p. 054518. DOI: 10.1103/PhysRevD.98.054518. arXiv: 1807.00495 [hep-lat]
  6. **“Strange nucleon electromagnetic form factors from lattice QCD”**. by C. Alexandrou, M. Constantinou, K. Hadjiyiannakou, K. Jansen, C. Kallidonis, G. Koutsou, and A. Vaquero Avilés-Casco. In: *Phys. Rev. D*97.9 (2018), p. 094504. DOI: 10.1103/PhysRevD.97.094504. arXiv: 1801.09581 [hep-lat]
  7. **“Topological susceptibility from twisted mass fermions using spectral projectors and the gradient flow”**. By C. Alexandrou, A. Athenodorou, K. Cichy, M. Constantinou, D. P. Horkel, K. Jansen, G. Koutsou, and C. Larkin. In: *Phys. Rev. D*97.7 (2018), p. 074503. DOI: 10.1103/PhysRevD.97.074503. arXiv: 1709.06596 [hep-lat]
  8. **“Nucleon Spin and Momentum Decomposition Using Lattice QCD Simulations”**. By C. Alexandrou, M. Constantinou, K. Hadjiyiannakou, K. Jansen, C. Kallidonis, G. Koutsou, A. Vaquero Avilés-Casco, and C. Wiese. In: *Phys. Rev. Lett.* 119.14 (2017), p. 142002. DOI: 10.1103/PhysRevLett.119.142002. arXiv: 1706.02973 [hep-lat]
  9. **“Nucleon electromagnetic form factors using lattice simulations at the physical point”**. By C. Alexandrou, M. Constantinou, K. Hadjiyiannakou, K. Jansen, C. Kallidonis, G. Koutsou, and A. Vaquero Aviles-Casco. In: *Phys. Rev. D*96.3 (2017), p. 034503. DOI: 10.1103/PhysRevD.96.034503. arXiv: 1706.00469 [hep-lat]
  10. **“Nucleon axial form factors using  $N_f = 2$  twisted mass fermions with a physical value of the pion mass”**. By C. Alexandrou, M. Constantinou, K. Hadjiyiannakou, K. Jansen, C. Kallidonis, G. Koutsou, and A. Vaquero Aviles-Casco. In: *Phys. Rev. D*96.5 (2017), p. 054507. DOI: 10.1103/PhysRevD.96.054507. arXiv: 1705.03399 [hep-lat]

11. **“Nucleon scalar and tensor charges using lattice QCD simulations at the physical value of the pion mass”**. By C. Alexandrou et al. In: *Phys. Rev. D* 95.11 (2017). [erratum: *Phys. Rev. D* 96, no. 9, 099906 (2017)], p. 114514. DOI: 10.1103/PhysRevD.96.099906, 10.1103/PhysRevD.95.114514. arXiv: 1703.08788 [hep-lat]
12. **“Position space method for the nucleon magnetic moment in lattice QCD”**. by C. Alexandrou, M. Constantinou, G. Koutsou, K. Ottnad, and M. Petschlies. In: *Phys. Rev. D* 94.7 (2016), p. 074508. DOI: 10.1103/PhysRevD.94.074508. arXiv: 1605.07327 [hep-lat]
13. **“Direct Evaluation of the Quark Content of Nucleons from Lattice QCD at the Physical Point”**. By A. Abdel-Rehim, C. Alexandrou, M. Constantinou, K. Hadjiyiannakou, K. Jansen, C. Kallidonis, G. Koutsou, and A. Vaquero Aviles-Casco. In: *Phys. Rev. Lett.* 116.25 (2016), p. 252001. DOI: 10.1103/PhysRevLett.116.252001. arXiv: 1601.01624 [hep-lat]
14. **“Neutron electric dipole moment using  $N_f = 2 + 1 + 1$  twisted mass fermions”**. By C. Alexandrou, A. Athenodorou, M. Constantinou, K. Hadjiyiannakou, K. Jansen, G. Koutsou, K. Ottnad, and M. Petschlies. In: *Phys. Rev. D* 93.7 (2016), p. 074503. DOI: 10.1103/PhysRevD.93.074503. arXiv: 1510.05823 [hep-lat]
15. **“First physics results at the physical pion mass from  $N_f = 2$  Wilson twisted mass fermions at maximal twist”**. By A. Abdel-Rehim et al. In: *Phys. Rev. D* 95.9 (2017), p. 094515. DOI: 10.1103/PhysRevD.95.094515. arXiv: 1507.05068 [hep-lat]
16. **“Nucleon and pion structure with lattice QCD simulations at physical value of the pion mass”**. By A. Abdel-Rehim et al. In: *Phys. Rev. D* 92.11 (2015). [Erratum: *Phys. Rev. D* 93, no. 3, 039904 (2016)], p. 114513. DOI: 10.1103/PhysRevD.92.114513, 10.1103/PhysRevD.93.039904. arXiv: 1507.04936 [hep-lat]
17. **“First moment of the flavour octet nucleon parton distribution function using lattice QCD”**. by C. Alexandrou, M. Constantinou, S. Dinter, V. Drach, K. Hadjiyiannakou, K. Jansen, G. Koutsou, and A. Vaquero. In: *JHEP* 06 (2015), p. 068. DOI: 10.1007/JHEP06(2015)068. arXiv: 1501.03734 [hep-lat]
18. **“Baryon spectrum with  $N_f = 2 + 1 + 1$  twisted mass fermions”**. By C. Alexandrou, V. Drach, K. Jansen, C. Kallidonis, and G. Koutsou. In: *Phys. Rev. D* 90.7 (2014), p. 074501. DOI: 10.1103/PhysRevD.90.074501. arXiv: 1406.4310 [hep-lat]
19. **“Disconnected quark loop contributions to nucleon observables in lattice QCD”**. by A. Abdel-Rehim, C. Alexandrou, M. Constantinou, V. Drach, K. Hadjiyiannakou, K. Jansen, G. Koutsou, and A. Vaquero. In: *Phys. Rev. D* 89.3 (2014), p. 034501. DOI: 10.1103/PhysRevD.89.034501. arXiv: 1310.6339 [hep-lat]
20. **“Strangeness of the nucleon from lattice QCD”**. by C. Alexandrou, M. Constantinou, S. Dinter, V. Drach, K. Hadjiyiannakou, K. Jansen, G. Koutsou, and A. Vaquero. In: *Phys. Rev. D* 91.9 (2015), p. 094503. DOI: 10.1103/PhysRevD.91.094503. arXiv: 1309.7768 [hep-lat]



21. **“Evaluation of disconnected quark loops for hadron structure using GPUs”**. By C. Alexandrou, M. Constantinou, V. Drach, K. Hadjiyiannakou, K. Jansen, G. Koutsou, A. Strelchenko, and A. Vaquero. In: *Comput. Phys. Commun.* 185 (2014), pp. 1370–1382. DOI: 10.1016/j.cpc.2014.01.009. arXiv: 1309.2256 [hep-lat]
22. **“Determination of the  $\Delta(1232)$  axial and pseudoscalar form factors from lattice QCD”**. by C. Alexandrou, E. B. Gregory, T. Korzec, G. Koutsou, J. W. Negele, T. Sato, and A. Tsapalis. In: *Phys. Rev. D* 87.11 (2013), p. 114513. DOI: 10.1103/PhysRevD.87.114513. arXiv: 1304.4614 [hep-lat]
23. **“Nucleon form factors and moments of generalized parton distributions using  $N_f = 2 + 1 + 1$  twisted mass fermions”**. By C. Alexandrou, M. Constantinou, S. Dinter, V. Drach, K. Jansen, C. Kallidonis, and G. Koutsou. In: *Phys. Rev. D* 88.1 (2013), p. 014509. DOI: 10.1103/PhysRevD.88.014509. arXiv: 1303.5979 [hep-lat]
24. **“Nucleon Excited States in  $N_f=2$  lattice QCD”**. by C. Alexandrou, T. Korzec, G. Koutsou, and T. Leontiou. In: *Phys. Rev. D* 89.3 (2014), p. 034502. DOI: 10.1103/PhysRevD.89.034502. arXiv: 1302.4410 [hep-lat]
25. **“Meson and Baryon dispersion relations with Brillouin fermions”**. By S. Durr, G. Koutsou, and T. Lippert. In: *Phys. Rev. D* 86 (2012), p. 114514. DOI: 10.1103/PhysRevD.86.114514. arXiv: 1208.6270 [hep-lat]
26. **“Evaluation of fermion loops applied to the calculation of the  $\eta'$  mass and the nucleon scalar and electromagnetic form factors”**. By C. Alexandrou, K. Hadjiyiannakou, G. Koutsou, A. O’Cais, and A. Strelchenko. In: *Comput. Phys. Commun.* 183 (2012), pp. 1215–1224. DOI: 10.1016/j.cpc.2012.01.023. arXiv: 1108.2473 [hep-lat]
27. **“The ratio  $m_c/m_s$  with Wilson fermions”**. By S. Durr and G. Koutsou. In: *Phys. Rev. Lett.* 108 (2012), p. 122003. DOI: 10.1103/PhysRevLett.108.122003. arXiv: 1108.1650 [hep-lat]
28. **“The  $\Delta(1232)$  axial charge and form factors from lattice QCD”**. by C. Alexandrou, E. B. Gregory, T. Korzec, G. Koutsou, J. W. Negele, T. Sato, and A. Tsapalis. In: *Phys. Rev. Lett.* 107 (2011), p. 141601. DOI: 10.1103/PhysRevLett.107.141601. arXiv: 1106.6000 [hep-lat]
29. **“Brillouin improvement for Wilson fermions”**. By S. Durr and G. Koutsou. In: *Phys. Rev. D* 83 (2011), p. 114512. DOI: 10.1103/PhysRevD.83.114512. arXiv: 1012.3615 [hep-lat]
30. **“Nucleon to Delta transition form factors with  $N_F = 2 + 1$  domain wall fermions”**. By C. Alexandrou, G. Koutsou, J. W. Negele, Y. Proestos, and A. Tsapalis. In: *Phys. Rev. D* 83 (2011), p. 014501. DOI: 10.1103/PhysRevD.83.014501. arXiv: 1011.3233 [hep-lat]

31. **“The Electromagnetic form factors of the  $\Omega^-$  in lattice QCD”**. by C. Alexandrou, T. Korzec, G. Koutsou, J. W. Negele, and Y. Proestos. In: *Phys. Rev. D* 82 (2010), p. 034504. DOI: 10.1103/PhysRevD.82.034504. arXiv: 1006.0558 [hep-lat]
32. **“Axial Nucleon and Nucleon to Delta form factors and the Goldberger-Treiman Relations from Lattice QCD”**. by C. Alexandrou, G. Koutsou, T. Leontiou, J. W. Negele, and A. Tsapalis. In: *Phys. Rev. D* 76 (2007). [Erratum: *Phys. Rev. D* 80,099901(2009)], p. 094511. DOI: 10.1103/PhysRevD.80.099901, 10.1103/PhysRevD.76.094511. arXiv: 0706.3011 [hep-lat]
33. **“Quark transverse charge densities in the Delta(1232) from lattice QCD”**. by C. Alexandrou, T. Korzec, G. Koutsou, C. Lorce, J. W. Negele, V. Pascalutsa, A. Tsapalis, and M. Vanderhaeghen. In: *Nucl. Phys. A* 825 (2009), pp. 115–144. DOI: 10.1016/j.nuclphysa.2009.04.005. arXiv: 0901.3457 [hep-ph]
34. **“Delta-baryon electromagnetic form factors in lattice QCD”**. by C. Alexandrou, T. Korzec, G. Koutsou, T. Leontiou, C. Lorce, J. W. Negele, V. Pascalutsa, A. Tsapalis, and M. Vanderhaeghen. In: *Phys. Rev. D* 79 (2009), p. 014507. DOI: 10.1103/PhysRevD.79.014507. arXiv: 0810.3976 [hep-lat]
35. **“A Study of Hadron Deformation in Lattice QCD”**. by C. Alexandrou and G. Koutsou. In: *Phys. Rev. D* 78 (2008), p. 094506. DOI: 10.1103/PhysRevD.78.094506. arXiv: 0809.2056 [hep-lat]
36. **“Light baryon masses with dynamical twisted mass fermions”**. By C. Alexandrou et al. In: *Phys. Rev. D* 78 (2008), p. 014509. DOI: 10.1103/PhysRevD.78.014509. arXiv: 0803.3190 [hep-lat]
37. **“Nucleon to delta electromagnetic transition form factors in lattice QCD”**. by C. Alexandrou, G. Koutsou, H. Neff, J. W. Negele, W. Schroers, and A. Tsapalis. In: *Phys. Rev. D* 77 (2008), p. 085012. DOI: 10.1103/PhysRevD.77.085012. arXiv: 0710.4621 [hep-lat]
38. **“The Nucleon electromagnetic form factors from Lattice QCD”**. by C. Alexandrou, G. Koutsou, J. W. Negele, and A. Tsapalis. In: *Phys. Rev. D* 74 (2006), p. 034508. DOI: 10.1103/PhysRevD.74.034508. arXiv: hep-lat/0605017 [hep-lat]
39. **“The Static tetraquark and pentaquark potentials”**. By C. Alexandrou and G. Koutsou. In: *Phys. Rev. D* 71 (2005), p. 014504. DOI: 10.1103/PhysRevD.71.014504. arXiv: hep-lat/0407005 [hep-lat]

#### Under peer-review

40. **“Parton distribution functions of  $\Delta^+$  on the lattice”**. By Y. Chai et al. In: (2020). arXiv: 2002.12044 [hep-lat]
41. **“A model-independent determination of the nucleon charge radius from lattice QCD”**. by C. Alexandrou, K. Hadjiyiannakou, G. Koutsou, K. Ottnad, and M. Petschlies. In: (2020). arXiv: 2002.06984 [hep-lat]

42. **“The nucleon axial, tensor and scalar charges and  $\sigma$ -terms in lattice QCD”**. by C. Alexandrou, S. Bacchio, M. Constantinou, J. Finkenrath, K. Hadjiyiannakou, K. Jansen, G. Koutsou, and A. Vaquero Aviles-Casco. In: (2019). arXiv: 1909.00485 [hep-lat]

### Conference proceedings

43. **“The Nucleon Spin Structure from Lattice QCD”**. by C. Alexandrou, M. Constantinou, K. Hadjiyiannakou, K. Jansen, C. Kallidonis, G. Koutsou, and A. Vaquero Avilés-Casco. In: *Acta Phys. Polon. Supp.* 12.4 (2019), pp. 861–866. DOI: 10.5506/APhysPolBSupp.12.861
44. **“Nucleon form factors from  $N_f = 2+1+1$  twisted mass fermions at the physical point”**. By C. Alexandrou, S. Bacchio, M. Constantinou, K. Hadjiyiannakou, G. Koutsou, K. Jansen, and A. Vaquero. In: *PoS LATTICE2018* (2018), p. 142. DOI: 10.22323/1.334.0142
45. **“Investigating volume effects for  $N_f=2$  twisted clover fermions at the physical point”**. By C. Alexandrou, S. Bacchio, M. Constantinou, D. Howarth, C. Lauer, K. Hadjiyiannakou, G. Koutsou, and K. Jansen. In: *PoS LATTICE2018* (2019), p. 314. DOI: 10.22323/1.334.0314. arXiv: 1904.10013 [hep-lat]
46. **“Towards the P-wave nucleon-pion scattering amplitude in the  $\Delta(1232)$  channel”**. By S. Paul et al. In: *PoS LATTICE2018* (2018), p. 089. DOI: 10.22323/1.334.0089. arXiv: 1812.01059 [hep-lat]
47. **“Nucleon spin structure from lattice QCD”**. by C. Alexandrou, M. Constantinou, K. Hadjiyiannakou, K. Jansen, C. Kallidonis, G. Koutsou, and A. V. Avilés-Casco. In: (2018). arXiv: 1807.11214 [hep-lat]
48. **“Connected and disconnected contributions to nucleon axial form factors using  $N_f = 2$  twisted mass fermions at the physical point”**. By C. Alexandrou, M. Constantinou, K. Hadjiyiannakou, K. Jansen, C. Kallidonis, G. Koutsou, and A. V. Avilés-Casco. In: *EPJ Web Conf.* 175 (2018), p. 06003. DOI: 10.1051/epjconf/201817506003. arXiv: 1807.11203 [hep-lat]
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