

# Kamil Serafin

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## Education

- 2015– **PhD candidate** in theoretical physics, University of Warsaw, Warsaw, Poland, advisor: prof. Stanisław Głazek, expected graduation: fall 2019.
- 2012–2014 **Master of Science** in theoretical physics, University of Warsaw, Warsaw, Poland, thesis: *Model of renormalization of masses and coupling constants*, advisor: prof. Stanisław Głazek.
- 2009–2012 **Bachelor of Science** in physics, individual studies in physics, University of Warsaw, thesis: *Relativistic kinematics of a rotor*, advisor: prof. Stanisław Głazek.

## Students practice

- 2011 Two weeks practice in Space Research Centre (Polish Academy of Sciences), Warsaw, Poland.

## Publications

- K. Serafin, M. Gómez-Rocha, J. More, S. D. Głazek, *Approximate Hamiltonian for baryons in heavy-flavor QCD*, Eur. Phys. J. **C78**, 964 (2018) arXiv:1805.03436
- S. M. Dawid, R. Gonsior, J. Kwapisz, K. Serafin, M. Tobolski, S. D. Głazek, *Renormalization group procedure for potential  $-g/r^2$* , Phys. Lett. **B777**, 260 (2018), arXiv:1704.08206
- S. D. Głazek, M. Gómez-Rocha, J. More, K. Serafin, *Renormalized quark–antiquark Hamiltonian induced by a gluon mass ansatz in heavy-flavor QCD*, Phys. Lett. **B773**, 172 (2017) arXiv:1705.07629
- K. Serafin, S. D. Głazek, *Elementary example of energy and momentum of an extended physical system in special relativity*, Am. J. Phys. **85**, 529 (2017) arXiv:1705.07106
- K. Serafin, J. Oracz, M. Grzybowski, M. Koperski, P. Sznajder, Ł. Zinkiewicz and P. Wasylczyk, *Measurement of the mass of an object hanging from a spring–revisited*, Eur. J. Phys. **33**, 129 (2012)

## Conference proceedings

- M. Gómez-Rocha, Kamil Serafin, *Effective-particle approach to bound states of quarks and gluons in QCD*, PoS Hadron2017 150 (2018), arXiv:1712.08100
- K. Serafin, *Relativistic Model of Hamiltonian Renormalization for Bound States and Scattering Amplitudes*, Few Body Syst. **58**, 125 (2017), arXiv:1705.03844

## Awards

- 2018 Gary McCartor Award granted by The International Light Cone Advisory Committee, <http://www.ilcacinc.org/newsILCACSTURA20180612.pdf>
- 2010 The first prize in competition *Konfrontacje eksperymentalne* (Experimental confrontations), organized at the Symposium of the Institute of Experimental Physics, Faculty of Physics, University of Warsaw for the best measurement of the mass of an object hanging from a spring in a sealed container.
- 2009 Laureate title in LVIII Polish National Physics Olympiad, Warsaw.

## Talks and posters

- 2018.09 Emergent mass and its consequences in the Standard Model, ECT\*, Trento, Italy,  
**talk** *Gluon-mass-induced triply heavy baryon masses.*
- 2018.05 Light Cone 2018, Jefferson Laboratory, Newport News, USA,  
**talk** *Approximate three-quark Hamiltonian in heavy flavor QCD.*
- 2017.09 Hadron 2017, Salamanca, Spain,  
**poster** *Effective quarks and gluons in heavy-flavor QCD.*
- 2017.07 The Charm and Beauty of Strong Interactions, ECT\*, Trento, Italy,  
**talk** *Harmonic oscillator force in heavy quarkonia.*
- 2017.02 “Bound States and Resonances” school, Admont, Austria,  
**poster** *Effective interactions between heavy quarks.*
- 2016.09 Light Cone 2016, Lisbon, Portugal,  
**talk** *Relativistic Yukawa model of Hamiltonian renormalization for bound states and scattering amplitudes.*
- 2015.03 Bound states in QCD and beyond, St. Goar, Germany,  
**poster** *Relativistic description of bound states and scattering amplitudes in Hamiltonian dynamics.*

## Seminars

- 2019.01 “Exact Results in Quantum Theory & Gravity”, University of Warsaw, Poland,  
*„Off-shell Coulomb potential from QED.”*
- 2018.03 Cracow-Warsaw PhD Students’ Symposium, Jagiellonian University, Cracow, Poland,  
*Effective Hamiltonians for hadrons induced by a gluon mass ansatz in QCD.*

- 2018.03 “Exact Results in Quantum Theory & Gravity”, University of Warsaw, Poland,  
„Renormalization of  $1/r^2$  potential.”
- 2017.12 XII Symposium of the Institute of Theoretical Physics, Faculty of Physics, University  
of Warsaw, Poland,  
*Renormalized quark Hamiltonian induced by a gluon mass ansatz in QCD.*
- 2012.11 Theory of Relativity Seminar, University of Warsaw, Poland,  
„Relativistic kinematics of a rotor.”

## Skills

- Programming: Python, C.
- Free software: Linux, Latex.
- Other: Mathematica, some experience with CUDA C.

## Teaching classes

- 2017 Mathematics III
- 2016 Mechanics and special theory of relativity
- 2016 Analysis
- 2015 Introduction to renormalization
- 2015 Mathematics I

## Academic service

- 2016–2018 Member of Science Council of Institute of Theoretical Physics, Faculty of Physics,  
University of Warsaw
- 2016 Member of PhD students’ Council at Faculty of Physics, University of Warsaw

## Students club

- 2017– President of Students Club of Physics in University of Warsaw (SKFiz).  
<http://skfiz.fuw.edu.pl/czlonkowie:serafin-kamil>
- 2011/2012 Vice-president of Students Club of Physics in University of Warsaw.
- 2010– Member of Students Club of Physics in University of Warsaw.

## Hobbies

- Alpine climbing
- Karate
- Guitar