

# Životopis/Popis publikacija i predavanja

## OSOBNI PODACI

<b>Ime i prezime</b>	<b>KORNELIJA PASSEK-KUMERIČKI</b>
<b>Titula</b>	Dr. sc.
<b>Godina i ustanova stjecanja titule</b>	2001, PMF, Sveučilište u Zagrebu
<b>Adresa</b>	Bijenička c. 54
<b>Telefon</b>	+385-1-4561032
<b>Telefaks</b>	+385-1-4680223
<b>E-adresa</b>	passek@irb.hr
<b>Osobna web stranica</b>	<a href="http://www.irb.hr/Ljudi/Kornelija-Passek-Kumerički">http://www.irb.hr/Ljudi/Kornelija-Passek-Kumerički</a>
<b>Državljanstvo/nacional.</b>	Hrvatsko / Hrvatica

## ŠKOLOVANJE

Godina	2001
Institucija	PMF, Sveučilište u Zagrebu
Zvanje	<b>Dr. sc.</b>
Radnja	"Primjena perturbativne kvantne kromodinamike na određivanje funkcije strukture piona", ("The application of the perturbative QCD to the pion form factor"), mentor: dr. Bene Nižić (Ruđer Bošković Institute, Zagreb)
Godina	1997
Institucija	PMF, Sveučilište u Zagrebu
Zvanje	<b>Mr. Sc.</b>
Radnja	"Ekskluzivna fotoprodukcija $K$ i $K^*$ mezona pri velikim prijenosima impulsa" ("Exclusive photoproduction of $K$ and $K^*$ mesons at large momentum transfer"), mentor: dr. Bene Nižić (Ruđer Bošković Institute, Zagreb)
Godina	1994
Institucija	PMF, Sveučilište u Zagrebu
Zvanje	<b>Dipl. Ing. fizike</b>
Radnja	"The computer-algebraic treatment of the hard exclusive reactions" ("Kompjutersko algebarska obrada tvrdih ekskluzivnih reakcija"), mentori: dr. Wolfgang Schweiger (Karl-Franzens Universitaet Graz), dr. Miroslav Furić (University of Zagreb)
Godina	1988 - 1994
Institucija	PMF, Sveučilište u Zagrebu
Školovanje	Studij (teorijske) fizike na Prirodoslovno-matematičkom fakultetu (PMF) u Zagrebu
Godina	1984 - 1988
Institucija	Matematičko-informatički obrazovni centar (MIOC), Zagreb
Školovanje	Srednja škola (gimnazija) s maturom

## USAVRŠAVANJE

Godina	1994-1996
Institucija	PMF, Sveučilište u Zagrebu
Opis	Postdiplomski studij

## JEZICI

MATERINSKI JEZIK	hrvatski
Jezik	engleski
Govor/Pisanje/Čitanje	<i>izvršno/izvršno/izvršno</i>
Jezik	njemački
Govor/Pisanje/Čitanje	<i>izvršno/izvršno/izvršno</i>
Jezik	francuski
Govor/Pisanje/Čitanje	<i>osnovno/osnovno/osnovno</i>

## RADNO ISKUSTVO

Datumi (od-do) 04/2020 -do danas  
 Ustanova zaposlenja Institut Ruđer Bošković (IRB), Zagreb  
 Naziv radnog mjesta Viši znanstveni suradnik  
 Područje rada *Teorijska fizika elementarnih čestica*

Datumi (od-do) 05/2005 - 03/2020  
 Ustanova zaposlenja Institut Ruđer Bošković (IRB), Zagreb  
 Naziv radnog mjesta Znanstveni suradnik  
 Područje rada *Teorijska fizika elementarnih čestica*

Datumi (od-do) 09/2005 – 01/2007  
 Ustanova zaposlenja University of Regensburg, Germany  
 Naziv radnog mjesta Gostujući znanstvenik  
 Područje rada *Teorijska fizika elementarnih čestica*

Datumi (od-do) 11/2001 – 10/2002  
 Ustanova zaposlenja University of Wuppertal, Germany  
 Naziv radnog mjesta Znanstvenik, postdoktorand  
 Područje rada *Teorijska fizika elementarnih čestica*

Datumi (od-do) 04/2001 – 05/2005  
 Ustanova zaposlenja Institut Ruđer Bošković (IRB), Zagreb  
 Naziv radnog mjesta Asistent s doktoratom  
 Područje rada *Teorijska fizika elementarnih čestica*

Datumi (od-do) 03/1994 – 04/2001  
 Ustanova zaposlenja Institut Ruđer Bošković (IRB), Zagreb  
 Naziv radnog mjesta Znanstveni novak  
 Područje rada *Teorijska fizika elementarnih čestica*

## PODRUČJE ISTRAŽIVANJA

### **Teorijska fizika elementarnih čestica**

Glavne teme istraživanja:

- QCD fenomenologija; posebno, istraživanje ekskluzivnih procesa i primjena perturbativnih računa
- fenomenologija nekomutativnog Standardnog modela fizike elementarnih čestica

## GOSTOVANJA NA STRANIM ZNANSTVENIM INSTITUCIJAMA

(SAMO BORAVCI DUŽI OD 3 MJESECA)

Datumi (od – do)	02/2010 – 06/2010
Institucija	University of Regensburg, Germany
Opis	Gost znanstvenik
Datumi (od – do)	09/2005 – 01/2007
Institucija	University of Regensburg, Germany
Opis	Gost znanstvenik
Datumi (od – do)	01/11/2001 – 31/10/2002
Institucija	University of Wuppertal, Germany
Opis	Znanstvenik (postdoktoralna pozicija)
Datumi (od – do)	03/1994 – 05/1994
Institucija	Institut fur Theoretische Physik, Karl Franzens Universitaet, Graz, Austria
Opis	Znanstvena suradnja (austrijska stipendija)
Datumi (od – do)	03/1993 – 06/1993
Institucija	Institut fuer Theoretische Physik, Karl Franzens Universitaet, Graz, Austria
Opis	Izrada diplomskog rada (austrijska stipendija)

MEĐUNARODNI ZNANSTVENI PROJEKTI  
(VOĐENJE I SUDJELOVANJE)

2019 – 2024

Voditelj istraživačkog projekta na ustanovi:

*STRONG-2020 project*, EU Horizon 2020 research and innovation programme,  
(EK-H2020-INFRAIA-2018-1, grant agreement No 824093,  
*JRA5-GPD-ACT: Generalized Parton Distributions*)

2016 – 2019

Voditelj projekta (Dec 2016 – Jan 2018), suvoditelj projekta i voditelj radnih paketa  
Obzor2020 (Širenje izvrsnosti i sudjelovanja) projekta:

*RBI-T-WINNING: Twinning a step forward of the Theoretical Physics Division  
of the Ruđer Bošković Institute*, H2020 project (EU H2020 CSA-2015 number 692194)

Voditelji projekta: Fabrizio Nesti (Feb 2016 - Nov 2016)

Kornelija Passek-Kumerički (Dec 2016 - Jan 2018)

Vinko Zlatić (Feb 2018 – Jan 2019)

Institucije partneri:

RBI (institucija koordinator), SISSA (Italy), LPT Orsay (France),  
Ludwig Maximilian University (Germany), Niels Bohr Institute (Denmark)

2008 – 2011

Sudionik na istraživačkom projektu:

*Revealing Generalized Parton Distributions*, DFG projekt;

Glavni istraživači: Prof. Dr. Maxim Polyakov (Uni. Bochum),

Dr. sc. Krešimir Kumerički (Uni. Zagreb);

Ostali lokalni sudionici: Dr.sc. Kornelija Passek-Kumerički

2005 – 2010

Sudionik na istraživačkom projektu:

*QCD sum rules for exclusive decays of heavy hadrons*;

Međuinstitutska suradnja (IRB i Uni Siegen) financirana od  
Alexander von Humboldt fondacije;

Glavni istraživači: Dr. sc. Blaženka Melić

Prof. dr. Thomas Mannel (Uni. Siegen);

Ostali lokalni sudionici: Dr. sc. Goran Duplančić, Dr.sc. Kornelija Passek-Kumerički

2003 – 2006

Glavni istraživač na istraživačkom projektu: :

*Hard exclusive photo- and electroproduction of heavy quarkonium*,

Austrijsko-hrvatski bilateralni projekt;

Glavni istraživači: Dr. sc. Kornelija Passek-Kumerički,

Prof. Dr. Wolfgang Schweiger (Karl-Franzens Uni. Graz);

Ostali lokalni sudionici: Dr. sc. Blaženka Melić

2003 – 2005

Glavni istraživač na istraživačkom projektu:

*Higher-order QCD corrections in exclusive processes - mesons and baryons*,

DFG projekt (436 KRO 113/6/0-1);

Glavni istraživači: Prof. Dr. Klaus Goetze (Uni. Bochum),

Dr. sc. Kornelija Passek-Kumerički;

Ostali lokalni sudionici: Dr. sc. Goran Duplančić, Dr. sc. Bene Nižić

DOMAĆI ZNANSTVENI PROJEKTI  
(VOĐENJE I SUDJELOVANJE)

2020 - 2024

Voditelj projekta:

*Razotkrivanje strukture hadrona pomoću tvrdih ekskluzivnih procesa (REVESTRUCTURE)*

HRZZ projekt IP-2019-04-9709

Istraživači: Dr. sc. Goran Duplančić, Dr.sc. Krešimir Kumerički, Dr.sc. Lech Szymanowski,  
Dr. sc. Nikola Crnković, Dr. sc. Raj Kishore, Dr. Sc. Saad Nabeebaccus

2014 - 2018

Sudionik na istraživačkom projektu:

*Physics of the Standard Model and Beyond*; HRZZ projekt (HrZZ 5169)

Voditelj projekta: Dr. sc. Blaženka Melić

2007 - 2013

Sudionik na istraživačkom projektu:

*Fundamental interactions in elementary particle physics and cosmology*;

MZOŠ projekt (098-0982930-2864)

Voditelj projekta: Dr. sc. Branko Guberina (2007-2011),  
Dr. sc. Nevenko Bilić (2012), Dr. sc. Goran Duplančić (2013)

2001 - 2006

Sudionik na istraživačkom projektu:

*Fundamental interactions in elementary particle physics and cosmology*;

MZT projekt (0098002)

Voditelj projekta: Dr. sc. Branko Guberina

1998 - 2000

Voditelj projekta:

*Ekskluzivni procesi u kvantnoj kromodinamici*; poticajni projekt za mlade znanstvenike,  
MZT projekt (098463)

1996 - 2001

Sudionik na istraživačkom projektu:

*Theoretical research of elementary particle properties*; MZT projekt (00980102)

Voditelj projekta: Dr. sc. Branko Guberina

1994 - 1996

Sudionik na istraživačkom projektu:

*Theoretical physics of fundamental interactions*; MZT projekt (1-03-199, P009801)

Voditelj projekta: Dr. sc. Nikola Zovko, Dr. sc. Branko Guberina

## ORGANIZACIJA DOMAĆIH I MEĐUNARODNIH ZNANSTVENIH DOGAĐANJA

- 2023 član Organizacijskog odbora međunarodnog skupa  
*REVESTRUCTURE*,  
Zagreb, Hrvatska, 10. - 12.7. 2023.
- 2021 član Organizacijskog odbora međunarodnog skupa  
ACHT 2021 "*Perspectives in Particle, Cosmo- and Astroparticle Theory*",  
online, 21. - 23.4. 2021.
- 2018 član Organizacijskog odbora međunarodnog skupa  
"*Getting to Grips with QCD-Summer Edition*",  
Primošten, Hrvatska, 18. - 22. 9. 2018.
- 2018 član Organizacijskog odbora međunarodne škole  
"*QCD meets precision*",  
LPT Orsay, France, 18. - 22.6. 2018.
- 2018 član Organizacijskog odbora međunarodnog skupa  
"*Getting to Grips with QCD*",  
Paris, France, 4. - 6.4. 2018.
- 2016 član Organizacijskog odbora međunarodnog skupa  
ACHT 2016, "*Non-perturbative aspects of Quantum Field Theory*",  
Čakovec, Croatia, 5. - 7.10. 2016.
- 2016 član Organizacijskog odbora međunarodne škole  
"*Dense systems in QCD at asymptotical energies*",  
LPT Orsay, France, 20.6 .- 1.7. 2016.
- 2014 ko-predsjedavajući (co-chair) međunarodnog skupa  
International Workshop on Diffraction in High-Energy Physics  
"*Diffraction 2014*", Primošten, 10. - 16.09. 2014.
- 2009 član Organizacijskog odbora međunarodnog skupa  
"*Progress and Challenges in Particle Physics*",  
Primošten, 29.09. - 3.10. 2009.
- 2001 član Organizacijskog odbora međunarodnog skupa  
8th Adriatic Meeting "*Particle Physics in the new millenium*",  
Dubrovnik, 4 - 14.09. 2001.

## ČLANSTVA U ZNANSTVENIM ORGANIZACIJAMA

Član Hrvatskog fizikalnog društva

## NASTAVA

2015 - 2017

vježbe iz Kvantne fizike, PMF, Sveučilište u Zagrebu

2006 - 2007 (zimski semestar)

vježbe iz *Math. Ergänzungen in der Physik*, Uni. Regensburg, Germany

2005 - 2006 (ljetni semestar)

vježbe iz *Struktur der Materie(III)*, Uni. Regensburg, Germany

## RAD S MLADIM ZNANSTVENICIMA

2020 - : mentor doktoranda (HrZZ projekt DOK-2020-01-9883)

2010-2012: suradnja s doktorandom T. Lautenschlaeger (Uni. Regensburg, Germany); objavljen zajednički članak (D. Mueller, T. Lautenschlaeger, K. Passek-Kumerički, A. Schaefer, Nucl. Phys. B884 (2014) 438-546); doktorska disertacija T. Lautenschlaeger 2014.

2006-2008: suradnja s doktorandom G. Peters (Uni. Regensburg, Germany); objavljen zajednički članak (K. Passek-Kumerički, G. Peters, Phys. Rev. D78 (2008) 033009); G. Peters obranio doktorsku disertaciju u srpnju 2008.

## DRUGE ZNANSTVENE DJELATNOSTI

Referiranje za Phy. Lett. B, Nucl. Phys. B, JHEP, Eur.Phys.J C, Fizika B

Ocjenjivanje HRZZ projekata

Ocjenjivanje projektnih prijava za EC HORIZON natječaje

## RAD NA RAČUNALU

Operacioni sistemi: Unix (Linux), MS Windows

Programiranje: Fortran

Software: Mathematica, MS Office

**Članci u CC časopisima**

- [1] N. Crnković, G. Duplančić, S. Nabeebaccus, K. Passek-Kumerički, B. Pire, L. Szymanowski, S. Wallon , "Hard exclusive photoproduction of photon-meson pairs: Pseudoscalar channels  $\pi$ ,  $\eta$ , and  $\eta'$ ", to appear in Phys.Rev. D, [[2511.19720 \[hep-ph\]](#)].
- [2] E. C. Aschenauer, V. Batozskaya, S. Fazio, A. Jentsch, J. Kim, K. Kumerički, H. Moutarde, K. Passek-K., D. Sokhan, H. Spiesberger, P. Sznajder, and K. Tezgin, "Study of deeply virtual Compton scattering at the future Electron-Ion Collider", Phys.Rev.D 112 (2025) 3, 036010, [[2503.05908 \[hep-ph\]](#)].
- [3] Yoshitaka Hatta, Henry T. Klest, Kornelija Passek-K., Jakob Schoenleber, "Deeply virtual  $\phi$ -meson production near threshold", accepted in Progress of Theoretical and Experimental Physics (PTEP), <https://doi.org/10.1093/ptep/ptaf076>, [[arXiv:2501.12343 \[hep-ph\]](#)].
- [4] G. Duplančić, P. Kroll, K. Passek-K., L. Szymanowski, "The twist-3 contribution to deeply virtual electroproduction of pions", Phys.Rev.D 109 (2024) 3, 034008, [[arXiv:2312.13164 \[hep-ph\]](#)].
- [5] M. Čuić, G. Duplančić, K. Kumerički, K. Passek-K., "NLO corrections to the deeply virtual meson production revisited: impact on the extraction of generalized parton distributions", JHEP 12 (2023) 192, [[arXiv:2310.13837 \[hep-ph\]](#)].
- [6] G. Duplančić, S. Nabeebaccus, K. Passek-Kumerički, B. Pire, L. Szymanowski, S. Wallon , "Probing chiral-even and chiral-odd leading twist quark generalized parton distributions through the exclusive photoproduction of a  $\gamma p$  pair", Phys.Rev.D 107 (2023) 9, 094023, [[arXiv: 2302.12026 \[hep-ph\]](#)].
- [7] G. Duplančić, S. Nabeebaccus, K. Passek-Kumerički, B. Pire, L. Szymanowski, S. Wallon , "Accessing chiral-even quark generalised parton distributions in the exclusive photoproduction of  $\gamma\pi^\pm$  pair with a large invariant mass in both fixed-target and collider experiments", JHEP 03 (2023) 241, [[arXiv: 2212.00655 \[hep-ph\]](#)].
- [8] P. Kroll, K. Passek-Kumerički, "Transition GPDs and exclusive electroproduction of  $\pi\Delta(1232)$  final states", Phys. Rev. D107 (2023) 054009, [[arXiv: 2211.09474 \[hep-ph\]](#)].
- [9] P. Kroll, K. Passek-Kumerički, "Wide-angle photoproduction of the  $\eta'$ -meson and its gluon content", Phys. Rev. D105 (2022)034005, [[arXiv: 2111.08965 \[hep-ph\]](#)].
- [10] P. Kroll, K. Passek-Kumerički, "Wide-angle photo- and electroproduction of pions to twist-3 accuracy", Phys.Rev.D 104 (2021) 5, 054040 [[arXiv: 2107.04544 \[hep-ph\]](#)].
- [11] P. Kroll, K. Passek-Kumerički, "On some implications of the BaBar data on the  $\gamma^*\eta'$  transition form factor", Phys. Lett. B793 (2019) 195-199 [[arXiv: 1903.06650 \[hep-ph\]](#)].
- [12] G. Duplančić, K. Passek-Kumerički, B. Pire, L. Szymanowski, S. Wallon , "Probing axial quark generalized parton distributions through exclusive photoproduction of a  $\gamma\pi^\pm$  pair with a large invariant mass", JHEP 1811 (2018) 179, [[arXiv: 1809.08104 \[hep-ph\]](#)].
- [13] P. Kroll, K. Passek-Kumerički, "Twist-3 contributions to wide-angle photoproduction of pions", Phys. Rev. D97 (2018) 074023 [[arXiv:1802.06597\[hep-ph\]](#)].
- [14] G. Duplančić, D. Mueller, K. Passek-Kumerički, "Next-to-leading order corrections to deeply virtual production of pseudoscalar mesons", Phys. Lett. B771 (2017) 603-610, [[arXiv:1612.01937\[hep-ph\]](#)]
- [15] D. Mueller, T. Lautenschlager, K. Passek-Kumerički, A. Schaefer, "Towards a fitting procedure to deeply virtual meson production -- the next-to-leading order case --", Nucl.Phys. B884 (2014) 438-546, [[arXiv:1310.5394\[hep-ph\]](#)].
- [16] Peter Kroll, Kornelija Passek-Kumerički, "The  $\eta$  ( $\eta'$ ) gamma transition form factor and the gluon-gluon distribution amplitude", J.Phys. G40 (2013) 075005, [[arXiv:1206.4870\[hep-ph\]](#)].
- [17] K. Passek-Kumerički, G. Peters, "Nucleon Form Factors to Next-to-Leading Order with Light-Cone Sum Rules", Phys. Rev. D78 (2008) 033009, [[arXiv:0805.1758\[hep-ph\]](#)].
- [18] Kresimir Kumerički, Dieter Mueller, Kornelija Passek-Kumerički, "Sum rules and dualities for generalized parton distributions: Is there a holographic principle?", Eur. Phys. J C58 (2008) 193-215, [[arXiv:0805.0152 \[hep-ph\]](#)].
- [19] K. Kumerički, D. Mueller, K. Passek-Kumerički, "Towards a fitting procedure for deeply virtual Compton scattering at next-to-leading order and beyond", Nucl. Phys. B 794 (2008) 244-323, [[arXiv:hep-ph/0703179](#)].
- [20] K. Kumerički, Dieter Mueller, K. Passek-Kumerički, A. Schaefer "Deeply virtual Compton scattering beyond next-to-leading order: the flavor singlet case", Phys. Lett. B 648 (2007); 186-194 [[arXiv:hep-ph/0605237](#)].



- [21] Blazenka Melić, Kornelija Passek-Kumerički, Josip Trampetic "K  $\rightarrow$   $\pi$  gamma decay and space-time noncommutativity", Phys.Rev.D72 (2005) 057502 [[arXiv:hep-ph/0507231](#)].
- [22] Blazenka Melić, Kornelija Passek-Kumerički, Josip Trampetic "Quarkonia decays into two photons induced by the space-time non-commutativity", Phys.Rev.D72 (2005) 054004 [[arXiv:hep-ph/0503133](#)].
- [23] Blazenka Melić, Kornelija Passek-Kumerički, Josip Trampetic, Peter Schupp, Michael Wohlgenannt "The Standard model on non-commutative space-time: Strong interactions included", Eur.Phys.J.C42 (2005) 499-504 [[arXiv:hep-ph/0503064](#)].
- [24] Blazenka Melić, Kornelija Passek-Kumerički, Josip Trampetic, Peter Schupp, Michael Wohlgenannt "The Standard model on non-commutative space-time: Electroweak currents and Higgs sector", Eur.Phys.J.C42 (2005) 483-497 [[arXiv:hep-ph/0502249](#)].
- [25] A. P. Bakulev, K. Passek-Kumerički, W. Schroers, N. G. Stefanis, "Pion form factor in QCD: From nonlocal condensates to NLO analytic perturbation theory", Phys.Rev.D70 (2004) 033014 [[arXiv:hep-ph/0405062](#)].
- [26] H.W. Huang, R. Jakob, P. Kroll, K. Passek-Kumerički, "Signatures of the handbag mechanism in wide-angle photoproduction of pseudoscalar mesons", Eur.Phys.J. C33 (2004) 91-103 [[arXiv:hep-ph/0309071](#)].
- [27] B. Melić, D. Muller, K. Passek-Kumerički, "Next-to-next-to-leading order prediction for the photon-to-pion transition form factor", Phys. Rev. D 68 (2003) 014013 [[arXiv:hep-ph/0212346](#)].
- [28] Peter Kroll, Kornelija Passek-Kumerički, "The two-gluon components of the eta and eta' mesons to leading-twist accuracy", Phys. Rev. D 67 (2003) 054017 [[arXiv:hep-ph/0210045](#)].
- [29] B. Melić, B. Nižić, K. Passek, "A note on the factorization scale independence of the PQCD predictions for exclusive processes", Eur.Phys.J.C36 (2004) 453-458 [[arXiv:hep-ph/0107311](#)].
- [30] B. Melić, B. Nižić, K. Passek, "Brodsky-Lepage-Mackenzie scale for the pion transition form factor", Phys. Rev. D 65 (2002) 053020 [[arXiv:hep-ph/0107295](#)].
- [31] B. Melić, B. Nižić, K. Passek, "Complete next-to-leading order perturbative QCD prediction for the pion electromagnetic form factor", Phys. Rev. D60 (1999) 074004 [[arXiv:hep-ph/9802204](#)].
- [32] P. Kroll, M. Schuermann, K. Passek, W. Schweiger, "Exclusive Photoproduction of Large Momentum-Transfer K and K\* Mesons", Phys. Rev. D55 (1997) 4315 [[arXiv:hep-ph/9604353](#)].

## Članci u ostalim časopisima

- [33] A.T. Goritschnig, B. Melić, K. Passek-Kumerički, W. Schweiger, "Hard Exclusive Photoproduction of Phi and J/Psi Mesons", Prog. Part. Nucl. Phys.61 (2008) 173-174, [[arXiv:0711.3973 \[hep-ph\]](#)].
- [34] K. Passek-Kumerički, "Hard exclusive reactions and the two-gluon components of eta and eta' mesons", Fizika B13 (2004) 513-522 [[arXiv:hep-ph/0311039](#)].
- [35] B. Melić, B. Nižić, K. Passek, "On the complete next-to-leading order pQCD prediction for the pion form factor", Fizika B 8 (1999) 327 [[arXiv:hep-ph/9903426](#)].

## ČLANCI U ZBORNICIMA

1. Kornelija Passek-K., "Twist-3 contribution to deeply virtual electroproduction of pions", PoS Transversity2024 (2024) 042 [[arXiv:2411.04092 \[hep-ph\]](#)].
2. Goran Duplančić, Saad Nabeebaccus, Kornelija Passek-K., Bernard Pire, Lech Szymanowski, Samuel Wallon, "Accessing Generalized Parton Distributions through 2 $\rightarrow$ 3 exclusive processes", PoS DIS2024 (2025) 228 [[arXiv:2410.03793 \[hep-ph\]](#)].
3. Goran Duplančić, Saad Nabeebaccus, Kornelija Passek-K., Bernard Pire, Jakob Schönleber, Lech Szymanowski, Samuel Wallon, "Exclusive photoproduction of a photon-meson pair: A new class of observables to probe GPDs", PoS SPIN2023 (2024) 007 [[arXiv: 2401.17656 \[hep-ph\]](#)].
4. K. Passek-K., "Deeply-virtual and photoproduction of mesons at higher-order and higher-twist", Contribution to Epiphany2023, Acta Phys.Polon.Supp. 16 (2023) 7, 7-A5., [[2308.09422 \[hep-ph\]](#)].
5. S. Nabeebaccus, S. Wallon, G. Duplančić, K. Passek-Kumerički, B. Pire, L. Szymanowski, "Accessing GPDs Through the Exclusive Photoproduction of a Photon–Meson Pair with a Large Invariant Mass", Acta Phys.Polon.Supp. 16 (2023) 5, 16, Contribution to Diffflowx2022, [[arXiv: 2212.01034 \[hep-ph\]](#)].
6. G. Duplančić, S. Nabeebaccus, K. Passek-Kumerički, B. Pire, L. Szymanowski, S. Wallon, "Accessing GPDs through the exclusive photoproduction of a  $\gamma$ -meson pair", Contribution to: DIS2022 [DOI: 10.5281/zenodo.7078119](#), [[arXiv: 2209.05380 \[hep-ph\]](#)].
7. K. Passek-Kumerički, "On wide-angle photo- and electroproduction of pions to twist-3 accuracy", Rev.Mex.Fis.Suppl. 3 (2022) 3, 0308113, prepared for 19th International Conference on Hadron

Spectroscopy and Structure in memoriam Simon Eidelman (HADRON 2021), Mexico City, Mexico (online), 26-31 July 2021 [[arXiv:2203.12334](https://arxiv.org/abs/2203.12334)].

8. G. Duplanić, K. Passek-Kumerički, B. Pire, L. Szymanowski, S. Wallon, "Probing Generalized Parton Distributions through the photoproduction of a  $\gamma\pi$  pair", *Acta Phys.Polon.Supp.* 12 (2019) 4, 855, [[arXiv:1812.09307](https://arxiv.org/abs/1812.09307)] [[hep-ph](#)].
9. A.T. Goritschnig, B. Melić, K. Passek-Kumerički, W. Schweiger, "Hard Exclusive Phi and J/Psi Photoproduction off a Proton", Proceedings of Science DIS2014 170, [[arXiv:1411.0904](https://arxiv.org/abs/1411.0904)] [[hep-ph](#)].
10. K. Kumerički, D. Mueller, K. Passek-Kumerički, A. Schaefer, M. Meskauskas. "Accessing GPDs from experiment --- potential of a high-luminosity EIC ---", The EIC Science case: a report on the joint BNL/INT/JLab program "Gluons and the quark sea at high energies: distributions, polarization, tomography", Seattle, Washington, September 13 to November 19, 2010 / Boer, D. ; Diehl, M. ; Milner R. ; Venugopalan, R. ; Vogelsang W. (ur.). - Published by: Brookhaven National Laboratory, USA ; Institute of Nuclear Theory, University of Washington, USA ; Thomas Jefferson National Accelerator Facility, USA ; August 2011 (BNL-96164-2011, INT-PUB-11-034, JLAB-THY-11-1373) , 2011. 185-196. [[arXiv:1105.0899](https://arxiv.org/abs/1105.0899)] [[hep-ph](#)].
11. K. Kumerički, D. Mueller, K. Passek-Kumerički, "A partonic interpretation of DVCS at small  $x(Bj)$ ", in AIP Conf.Proc.1105 (2009) 367-372, prepared for Diffraction 2008: International Workshop on Diffraction in High Energy Physics, La Londe-les-Maures, France, 9-14 Sep 2008.
12. K. Kumerički, D. Mueller, K. Passek-Kumerički, "Fitting DVCS amplitude in momentum-space approach to GPDs", Proc. of the XVI International Workshop on Deep-Inelastic Scattering and Related Topics (DIS 2008), London, England, 7-11 April 2008 (edited by R. Devenish, J. Ferrando), p. 98. [[arXiv:0807.0159](https://arxiv.org/abs/0807.0159)] [[hep-ph](#)].
13. K. Kumerički, D. Mueller, K. Passek-Kumerički, "GPD sum rules: A Tool to reveal the quark angular momentum", Proc. of the XVI International Workshop on Deep-Inelastic Scattering and Related Topics (DIS 2008), London, England, 7-11 April 2008 (edited by R. Devenish, J. Ferrando), p. 214-217. [[arXiv:0807.0170](https://arxiv.org/abs/0807.0170)] [[hep-ph](#)].
14. K. Kumerički, D. Mueller, K. Passek-Kumerički, "Fitting DVCS at NLO and beyond", Proc. of the 12th International Conference on Elastic and Diffractive Scattering: Forward Physics and QCD, Hamburg, DESY, Germany, 21-25 May 2007 (edited by J. Bartels, K. Borras, M. Diehl, H. Jung; Verlag Deutsches Elektronen-Synchrotron, 2007), p. 17-25. [[arXiv:0710.5649](https://arxiv.org/abs/0710.5649)] [[hep-ph](#)].
15. N. G. Stefanis, A. P. Bakulev, S. V. Mikhailov, K. Passek-Kumerički, W. Schroers, "Pion structure: From nonlocal condensates to NLO analytic perturbation theory", Proc. of the Workshop on Hadron Structure and QCD: From Low to High Energies (HSQCD 2004), St. Petersburg, Repino, Russia, 18-22 May 2004. [[arXiv:hep-ph/0409176](https://arxiv.org/abs/hep-ph/0409176)].
16. K. Passek-Kumerički, "Hard exclusive processes and higher-order QCD corrections", in the Proc. of the 9th Adriatic Meeting "Particle Physics and the Universe", Dubrovnik, Croatia, 4-14 September 2003 (edited by J. Trampetic, J. Wess; Springer-Verlag, 2004), p. 399-414 [[arXiv:hep-ph/0407122](https://arxiv.org/abs/hep-ph/0407122)].
17. K. Passek, "Leading-twist two gluon distribution amplitude and exclusive processes involving eta and eta' mesons", in Proc. of the JLab workshop on Exclusive Processes at High Momentum Transfer, Jefferson Lab, Newport News, Virginia, USA, 15-18 May, 2002: Newport News 2002, Exclusive Processes at High Momentum Transfer (edited by A. Radyushkin, P. Stoler; Singapore, World Scientific, 2002.), p. 136-141 [[arXiv:hep-ph/0210079](https://arxiv.org/abs/hep-ph/0210079)].
18. B. Melić, B. Nižić, K. Passek, "BLM scale for the pion transition form factor", [arXiv:hep-ph/0210080](https://arxiv.org/abs/hep-ph/0210080), in Proc. of the 8th Adriatic Meeting, Central European Symposia "Particle Physics in the New Millennium", Dubrovnik, Croatia, 4-14 September 2001 [electronic form, CD].
19. B. Melić, B. Nižić, K. Passek, "On the PQCD prediction for the pion form factor", in Proc. of the 6th INT / Jlab Workshop on Exclusive and Semiexclusive Processes at High Momentum Transfer, Newport News, Virginia, USA, 20-22 May 1999: Newport News 1999, Exclusive and semi-exclusive processes at high momentum transfer (edited by C. Carlson, A. Radyushkin; Singapore, World Scientific, 2000.), p. 279-286 [[arXiv:hep-ph/9908510](https://arxiv.org/abs/hep-ph/9908510)].

## UREDNIČKE KNJIGE

1. M. Capua, R. Fiore, K. Kumerički, A. Papa, K. Passek-Kumerički, E. Tassi, G.P. Vacca, Proceedings of "[Diffraction 2014: International Workshop on Diffraction in High Energy Physics](#)", Primošten, Croatia, 10-16 September 2014"; Melville, New York, AIP Publishing, AIP Conf. Proc 1654, 2015.

## PREDAVANJA

### Pozvana predavanja na međunarodnim znanstvenim skupovima

1. K. Passek-K., "[Deeply virtual lepton production of pseudoscalar mesons: the role of higher twist contributions](#)", invited talk given at COMPASS Collaboration Meeting, CERN, 5 - 6 December 2024.
2. K. Passek-K., "[On DVMP: impact of NLO and higher-twist effects revisited](#)", invited talk given at the programme Hadron Physics 2030, Institut Pascal - Saclay, Orsay, France, 21 October - 25 November 2024.
3. K. Passek-K., "[DVMP at higher-order and higher-twist revisited](#)", invited talk given at the workshop Towards improved hadron tomography with hard exclusive reactions, ECT Trento, Italy, 5-9 August 2024.
4. K. Passek-K., "[Twist-3 contribution to deeply virtual electroproduction of pions](#)", invited talk given at Transversity 2024: 7th International Workshop on "Transverse phenomena in hard processes and the transverse structure of the proton", Trieste, Italy, 3-7 June 2024.
5. K. Passek-K., "[Meson production at NLO and higher-twist revisited](#)" and [photoproduction of mesons](#)", invited talk given at RBRC Workshop: Generalized Parton Distributions for Nucleon Tomography in the EIC Era, Brookhaven National Laboratory, USA, 17-19 January 2024.
6. K. Passek-K., "[Higher-twist contributions to deeply-virtual and photoproduction of mesons](#)", invited talk given at QCD Evolution Workshop 2023, Orsay, France, 22-26 May 2023.
7. K. Passek-K., "[Deeply-virtual and photoproduction of pseudoscalar mesons at higher-order and higher-twist](#)", invited talk given at DIS2023: XXX International Workshop on Deep-Inelastic Scattering and Related Subjects, East Lansing, Michigan, USA, 27-31 March 2023.
8. K. Passek-K., "[Accessing GPDs through meson production](#)", invited talk given at the Meeting of the Forschungsgruppe FOR 2926, Next Generation Perturbative QCD for Hadron Structure: Preparing for the Electron-Ion Collider, Regensburg, Germany, 16-17 February 2023.
9. K. Passek-K., "[Deeply-virtual and photoproduction of mesons at higher-order and higher-twist](#)", invited talk given at the conference XXIX Cracow Epiphany Conference on Physics at the Electron-Ion Collider and Future Facilities, Krakow, Poland, 16-19 January 2023.
10. K. Passek-Kumerički, "[Higher order and higher-twist aspects of DV and photoproduction of mesons](#)", invited talk given at the workshop 3DPartons week, Paris, France, 26-28 October 2022.
11. K. Passek-Kumerički, "[Revealing Hadron Structures Through Hard Exclusive Processes](#)", invited talk given at the Symposium "Relativistic Hadrons", Graz, Austria, 30 September 2022.
12. K. Passek-Kumerički, "[Photo- and electroproduction of pions and eta mesons at twist-3](#)", invited talk given at the workshop Towards improved hadron femtomography with hard exclusive reactions, Virginia Tech, USA (online), 18-22 July 2022.
13. K. Passek-Kumerički, "[On meson production, higher orders, DAs and all that](#)", invited talk given at the workshop Prospects for extraction of GPDs from global fits of current and future data, Warsaw, Poland, 22-25 January 2019.
14. K. Passek-Kumerički, "[Introduction to Generalized Parton Distributions, DVCS and DVMP](#)", invited talk given at the WE-Heraeus Physics School Diffractive and electromagnetic processes at high energies, Bad Honnef, Germany, 17-21 August 2015.
15. K. Passek-Kumerički, "[GPDs from DVCS at L0 and beyond](#)", invited talk given at the workshop Diffractive and electromagnetic processes at LHC, Trento, Italy, 4-8 January, 2010.
16. K. Passek-Kumerički, "[Fitting GPDs to DVCS Data: At Next-to-Leading-Order and Beyond](#)", invited talk given at the GPD 2008: Workshop on Hard Exclusive Reactions, Trento, Italy, 9-13 June, 2008.
17. K. Passek-Kumerički, "[Towards a fitting procedure for DVCS at next-to-leading order and beyond](#)", invited talk given at the 12th International Conference on Elastic and Diffractive Scattering Forward Physics and QCD, DESY, Hamburg, Germany, 21-25 May, 2007.
18. K. Passek-Kumerički, "[Hard exclusive processes and higher-order QCD corrections](#)", invited talk given at the 9th Adriatic Meeting, Dubrovnik, Croatia, 4-14 September 2003 .
19. K. Passek, "[On the PQCD prediction for the pion form factor](#)", invited talk given at the workshop Exclusive & Semiexclusive Processes at High Momentum Transfer, Joint INT/ Jefferson Lab Workshop, Newport News, Virginia, USA, 20-22 May 1999.

20. K. Passek, "*On the complete next-to-leading order pQCD prediction for the pion form factor*", invited talk given at the workshop Structure Functions and Hadronic Wave Functions, Bad Honnef, Germany, 14-18 December 1998.

### **Ostala predavanja (poster) na međunarodnim znanstvenim skupovima**

1. K. Passek-K., "[\*The role of NLO and higher-twist effects in deeply virtual meson production\*](#)", talk given at Low-x 2025 workshop, Medulin Croatia, 8-12 September 2025.
2. K. Passek-K., "[\*On hard exclusive processes, meson production, and hadron tomography\*](#)", talk given at ACHT2025 workshop, Budapest, Austria, 5-7 May 2025.
3. K. Passek-K., "[\*Higher order and higher-twist aspects of exclusive meson production\*](#)", talk given at ACHT2023 workshop, Leibnitz (Wagna), Austria, 27-29 September 2023.
4. K. Passek-Kumerički, "[\*On wide-angle photo- and electroproduction of pions to twist-3 accuracy\*](#)", talk given at HADRON 2021, 19th International Conference on Hadron Spectroscopy and Structure in memoriam Simon Eidelman, Mexico City (Mexico), 26-31 July 2021 (online).
5. K. Passek-Kumerički, "[\*Discussing the light-meson DAs\*](#)", talk given at the workshop "Light-cone Distribution Amplitudes of Hadrons in QCD and their Applications", Mainz Institute for Theoretical Physics, Johannes Gutenberg University, Germany, 13-24 January 2020.
6. K. Passek-Kumerički, "[\*On exclusive hard processes with light mesons\*](#)", talk given at the workshop Getting to Grips with QCD, Paris, France, 4-6 April 2018.
7. K. Passek-Kumerički, "Exclusive hard processes with mesons", talk given at ACHT2017 meeting Non-Perturbative Methods in Quantum Field Theory, Zalakaros, Hungary, 20-22 September 2017 .
8. K. Passek-Kumerički, "Generalized Parton Distributions (GPDs) through DVCS and DVMP", talk given at ACHT2015 meeting Strong Interactions in Quantum Field Theory, Leibnitz, Austria, 7-9 October 2015 .
9. K. Passek-Kumerički, "*Higher-order QCD corrections to hard exclusive processes*", talk given at the Symposium on Quarks in Hadrons and Nuclei II, Rothenfels Castle, Oberwaelz, Austria, 15-20 September 2003 .
10. K. Passek-Kumerički, "*Hard exclusive reactions and the two-gluon components of the eta and eta' mesons*", talk given at the NAPP 2003 Conference, Dubrovnik, Croatia, 26-31 May, 2003 .
11. K. Passek-Kumerički, "*Two-gluon components of the eta and eta' mesons in the standard hard-scattering picture*", talk given at the Internationale Universitaetswochen fuer Theoretische Physik (Flavour Physics), Schladming, Austria, 22 - 28 February, 2003.
12. K. Passek-Kumerički, "*The leading-twist contributions of the two-gluon states in the hard processes involving eta and eta' mesons*", talk given at the DESY Theory Workshop on Quantum Chromodynamics, DESY, Hamburg, Germany, 24-27 September, 2002.
13. K. Passek-Kumerički, "*The leading-twist two gluon distribution amplitude in exclusive processes involving eta and eta' mesons*", talk given at the workshop on Spontaneously Broken Chiral Symmetry and Hard QCD Phenomena, Bad Honnef, Germany, 15-19 July, 2002.
14. K. Passek, "*Leading-twist two gluon distribution amplitude and exclusive processes involving eta and eta' mesons*", talk given at the workshop on Exclusive Processes at High Momentum Transfer, Jefferson Lab, Newport News, USA, 15-18 May, 2002.
15. K. Passek, "*BLM scale for the pion transition form factor*", talk given at the 8th Adriatic Meeting, Dubrovnik, Croatia, 4-14 September 2001.
16. K. Passek, "*BLM scale for the pion transition form factor*", poster presented at the 55th Scottish Universities Summer School in Physics, St Andrews, Scotland, U.K., 7-23 August 2001.
17. K. Passek, "*BLM scale setting for the pion transition form factor*", talk given at the Triangle Seminar on Particle Physics, Vienna, Austria, December 1-2, 2000.
18. K. Passek, "*On the complete next-to-leading order pQCD prediction for the pion form factor*", talk given at the conference Nuclear and Particle Physics with CEBAF at Jefferson Lab., Dubrovnik, Croatia, 3-10 November 1998.
19. K. Passek, "*On the complete next-to-leading order QCD corrections to the pion electromagnetic form factor*", talk given at the Triangle Seminar on Particle Physics, Vienna, Austria, 28-29 November 1997.
20. K. Passek, "*Exclusive photoproduction of large momentum-transfer K and K\* mesons*", talk given at the Universitaetswochen fuer Kern- und Teilchen Physik, Schladming, Austria, March 1996.



### **(Pozvana) predavanja na stranim institucijama**

1. K. Passek-Kumerički, *"On exclusive hard processes with mesons and deeply virtual processes"*, talk given at NCBJ, Warsaw, Oct 6th, 2017.
2. K. Passek-Kumerički, *"The Standard model on non-commutative space-time"*, talk given at the University of Oslo, Sep 26th, 2007.
3. K. Passek-Kumerički, *"Hard exclusive processes and higher-order QCD corrections"*, talk given at the University of Regensburg, Germany, Oct 21st, 2005.
4. K. Passek-Kumerički, *"Hard exclusive processes and higher order QCD corrections"*, talk given at the University of Wuppertal, Germany, Nov 18th, 2003.
5. K. Passek-Kumerički, *"Perturbative QCD approach to the hard exclusive reactions and the two-gluon components of the eta and eta' mesons"*, talk given at the Karl-Franzens Universitaet, Graz, Austria, June 25th, 2003 .
6. K. Passek-Kumerički, *"Hard exclusive processes and the two-gluon components of the eta and eta' mesons"*, talk given at the University of Aachen, Germany, Oct 24th, 2002.
7. K. Passek-Kumerički, *"Transition form factor for the flavour singlet pseudoscalar meson"*, talk given at the University of Wuppertal, Germany, Feb 13th, 2002.
8. K. Passek, *"BLM scale setting for the pion transition form factor"*, talk given at the University of Bochum, Germany, June 18, 2001.
9. K. Passek, *"On the complete alphaS-corrections to the pion form factor"*, talk given at the Institut fuer Theoretische Physik, Karl-Franzens Universitaet, Graz, Austria, May 28, 1997