

**Univerzitet Crne Gore  
Prirodno-matematički fakultet**

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Broj:

16612

Datum:

18 -02- 2021

**UNIVERZITET CRNE GORE**

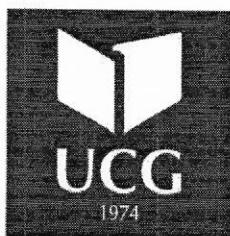
**-Senatu-**

**-Centru za doktorske studije-**

U prilogu akta dostavljamo Odluku sa LVIII sjednice Vijeće PMF-a od 16.02.2021. godine o imenovanju mentora doktorandu mr Itani Bubanja.



D E K A N  
Prof. dr Predrag Miranovic



**Univerzitet Crne Gore**  
**Prirodno-matematički fakultet**

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Broj: 166/1

Datum: 18.01.2021. g.

Na osnovu člana 64 Statuta Univerziteta Crne Gore, a u vezi sa članom 29 i 30 Pravila doktorskih studija Univerziteta Crne Gore, Vijeće Prirodno-matematičkog fakulteta na LVIII sjednici održanoj 16.02.2021.godine, donijelo je

**ODLUKU**

I

Predlažemo Senatu i Centru za doktorske studije Univerziteta Crne Gore **prof. dr Natašu Raičević**, redovnog profesora Prirodno-matematičkog fakulteta Univerziteta Crne Gore za mentora studentu doktorskih studija, studijski program Fizika, mr Itani Bubanji, a za komentatora **dr Laurent Favart**, direktora istraživanja Fonda za naučna istraživanja Univerziteta ULB (Universite Libre de Bruxelles) u Briselu.

II

Dokumentacija o ispunjenosti uslova za imenovanje mentora i komentatora i Potvrda o studiranju mr Itane Bubanje predstavlja sastavni dio Odluke.

III

Odluka se dostavlja Senatu UCG i Centru za doktorske studije na dalje postupanje

DEKAN  
Prof. dr Predrag Miranović

## MENTORSTVO

<b>Kandidat: Ime i prezime</b>	<b>Itana Bubanja</b>			
<b>PREDLOŽENI MENTOR/I</b>				
<b>Prvi mentor</b>	Titula, ime i prezime Redovni profesor Dr Nataša Raičević	Ustanova i država Univerzitet Crne Gore, Crna Gora	Naučna oblast Fizika elementarnih čestica	
<b>Drugi mentor</b>	Direktor za istraživanja Dr Laurent Favart	Fond za naučna istraživanja (FNRS) pri Univerzitetu u Briselu (ULB), Belgija	Fizika elementarnih čestica	
Sjednica Vijeća organizacione jedinice na kojoj je izvršeno predlaganje mentora		<u>16.02.2021. g.</u>		
<b>KOMPETENCIJE MENTORA</b> (pet objavljenih radova u relevantnim časopisima)				
<b>Prvi mentor</b>	1	G. Akakishiev et al., A new robust fitting algorithm for vertex reconstruction in the CERES experiment, Nucl. Instrum. Meth. A394 (1997) 225.		
	2	A. Glazov, N. Raičević and A. Zhokin, Fast simulation of showers in the H1 calorimeter, Computer Physics Communication 181 (2010) 1008.		
	3	N. Raičević and A. Glazov, Shower library technique for fast simulation of showers in calorimeters of the H1 experiment, Nucl. Instrum. Meth. A718 (2013) 104.		
	4	F. D. Aaron et al., H1 Collaboration, Measurement of the proton structure function $F_L(x, Q^2)$ at low $x$ , Phys. Lett. B665 (2008) 139.		
	5	F. D. Aaron et al., H1 Collaboration, Measurement of the inclusive $e^\pm p$ scattering cross section at high inelasticity $y$ and of the structure function $F_L$ , Eur. Phys. J. C71 (2011) 1579.		
<b>Drugi mentor</b>	1	T. Ahmed et al., H1 Collaboration, A measurement of the proton structure function $F_2(x, Q^2)$ , Nucl. Phys. B 439 (1995) 471-502		
	2	L. Favart, M.V.T. Machado, Deeply virtual Compton scattering and saturation approach, Eur. Phys. J. C29, 365-371 (2003)		
	3	A. Aktas et al. [H1 Collaboration], Diffractive deep-inelastic scattering with a leading proton at HERA, Eur. Phys. J. C 48, 749-766 (2006)		
	4	L. Favart, M. Guidal, T. Horn and P. Kroll, Deeply Virtual Meson Production on the nucleon, Eur. Phys. J. A (2016) 52:158		
	5	Khachatryan, Vardan, et al. [CMS Collaboration], Measurements of the differential production cross sections for a Z boson in association with jets in pp collisions at $\sqrt{s} = 8$ TeV, JHEP 1704 (2017) 022		
<b>PODACI O MAGISTRANDIMA I DOKTORANDIMA</b>				
	Broj magistranada	Broj doktoranada		

	trenutno	ukupno	trenutno	ukupno
Prvi mentor	/	2	2	2
Drugi mentor	1	11	3	10
<b>Datum i ovjera (pečat i potpis odgovorne osobe)</b>				
U Podgorici, 29.01.2021.				
DEKAN				
MP				



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Crne Gore  
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PRIRODNO-MATEMATIČKI FAKULTET  
Broj  
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Podgorica, 29-01-2021 god.

Podgorica, 29. januar 2021.

**ZAHTEV ZA IMENOVANJE MENTORA  
Vijeću Prirodno-matematičkog fakulteta**

Poštovani,

Obraćam Vam se zahtjevom za imenovanje mentora na doktorskim studijama Prirodno-matematičkog fakulteta, studijski program Fizika.

Za mentore predlažem dr Natašu Raičević, redovnog profesora na Univerzitetu Crne Gore i dr Laurent-a Favart-a, direktora Fonda za naučno istraživanje (FNRS) pri univerzitetu u Briselu (ULB) u Belgiji.

S poštovanjem,

*Itana Bubanja*  
Itana Bubanja,  
Student doktorskih studija

Saglasnost mentora:

*N. Raičević*  
Prof. dr Nataša Raičević

*Laurent Favart*  
Prof. dr Laurent Favart

# УНИВЕРЗИТЕТ ЦРНЕ ГОРЕ

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Број: 08-1844  
Датум, 28.10.2010. г.

УНИВЕРЗИТЕТ ЦРНЕ ГОРЕ  
Природно-математички факултет  
Год. 2010  
Подгорица, 11.11.2010. год.

Ref: \_\_\_\_\_  
Date, \_\_\_\_\_

На основу члана 75 stav 2 Zakona o visokom obrazovanju (Sl.list RCG, br. 60/03 i Sl.list CG, br. 45/10) i člana 18 Statuta Univerziteta Crne Gore, Senat Univerziteta Crne Gore, na sjednici održanoj 28.10.2010. godine, donio je

## ODLUKU O IZBORU U ZVANJE

Dr NATAŠA RAIČEVIĆ bira se u akademsko zvanje redovni profesor Univerziteta Crne Gore za predmete: Elektromagnetizam i Fizika elementarnih čestica, na Prirodno-matematičkom fakultetu.

REKTOR

Prof.dr Predrag Miranović

# Curriculum Vitae

## Lični podaci

**Ime i prezime:** Nataša Raičević

**Datum i mjesto rođenja:** 12.08. 1970, Srbija

**Djevojačko prezime:** Saveljić

**Strani jezici:** engleski – aktivno znanje  
ruski – dobro razumjevanje i čitanje

## Kontakt

**Adresa:** Univerzitet Crne Gore, Prirodno-matematički fakultet, Džordža Vašingtona BB, 81000 Podgorica, Crna Gora

**E-mail:** natasar@ucg.ac.me

## Obrazovanje

**1993 Diplomirani fizičar,** Univerzitet Crne Gore, Prirodno-matematički fakultet  
(prosječna ocjena na studijama 9.90)

**1997 Magistar fizičkih nauka,** Univerzitet u Beogradu, Fizički fakultet  
(prosječna ocjena na studijama 10.0)

**2000 Doktor fizičkih nauka,** Univerzitet u Beogradu, Fizički fakultet

## Studentske nagrade i priznanja

**1990 Decembarska nagrada za najboljeg studenta** Prirodno-matematičkog fakulteta

**1993 Nagrada Univerziteta Crne Gore za najboljeg studenta završne godine** Prirodno-matematičkog fakulteta Univerziteta Crne Gore za školsku 1992/93. godinu

## Profesionalne pozicije

**1993–1997 Saradnik u nastavi** na Prirodno-matematičkom fakultetu Univerziteta Crne Gore u Podgorici, Crna Gora

**1997–2000 Asistent** na Prirodno-matematičkom fakultetu Univerziteta Crne Gore u Podgorici,

Crna Gora

**2000–2005** Docent na Prirodno-matematičkom fakultetu Univerziteta Crne Gore u Podgorici, Crna Gora

**2005–2010** Vanredni profesor na Prirodno-matematičkom fakultetu Univerziteta Crne Gore u Podgorici, Crna Gora

**2010–danas** Redovni profesor na Prirodno-matematičkom fakultetu Univerziteta Crne Gore u Podgorici, Crna Gora

## Nastava

**Vježbe na matičnom i nematičnim fakultetima** (u zvanju saradnika i asistenta)

Elektromagnetizam, Optika, Statistička fizika, Fizika čvrstog stanja, Nuklearna fizika (PMF), Eksperimentalne vježbe na nematičnim fakultetima

**Predavanja na predmetima** (u zvanju docenta, vanrednog i redovnog profesora)

**Elektromagnetizam** – osnovne studije na Prirodno-matematičkom fakultetu

**Fizika elementarnih čestica** – specijalističke studije na Prirodno-matematičkom fakultetu

**Računari i programiranje** – osnovne studije na Prirodno-matematičkom fakultetu

**Teorijska elektrodinamika** - osnovne studije na Prirodno-matematičkom fakultetu

**Viši kurs fizike elementarnih cestica 1** - magisterske studije na Prirodno-matematičkom fakultetu

**Eksperiment u savremenoj fizici čestica** - magisterske studije na Prirodno-matematičkom fakultetu

**Viši kurs fizike elementarnih čestica** - magisterske studije na Prirodno-matematičkom fakultetu

**Biofizika** na Medicinskom fakultetu

**Poglavlja iz fizike** u okviru predmeta Fiziologija na Medicinskom fakultetu

## Oblast istraživanja

**Eksperimentalna fizika elementarnih čestica**

**1995 – 1999 Član međunarodne istraživačke kolaboracije eksperimenta CERES** u laboratoriji CERN u Ženevi (akcelerator SPS)

**1995–1996** Testiranje performansi trigera prvog nivoa na eksperimentu CERES  
Ujedinjeni institut za nuklearna istraživanja u Dubni, Rusija

**1996-1997** Unapređenje softvera za analizu događaja sa eksperimenta CERES – rekonstrukcija verteksa za interakciju jezgara olova sa segmentisanom metom od zlata  
Ujedinjeni institut za nuklearna istraživanja u Dubni, Rusija

**1996–1999** Proučavanje emisije  $e^+e^-$  parova u interakcijama teških jona  
Fizički institut Univerziteta u Hajdelbergu, Njemačka  
Univerzitet Crne Gore

**2002– Član međunarodne istraživačke kolaboracije eksperimenta H1** u laboratoriji DESY u Hamburgu, Njemačka (akcelerator HERA)  
Ova istraživanja realizovana su na Univerzitetu Crne Gore i kroz veći broj višemjesečnih boravaka godišnje na institutu DESY u Hamburgu i Berlinu.

**2002-2005** Analiza podataka za mjerjenje efikasnog presjeka za duboko neelastično rasijanje elektrona (pozitrona) na protonu pri malim i srednjim vrijednostima kvadrata predatog kvadri-impulsa

**2004-2005** Rad na unapređenju softverskog rješenja za simulaciju kaskada čestica u kalorimetru H1 eksperimenta koji detektuje elektrone sa malim uglom rasijanja

**2005-2007** Analiza podataka za mjerjenje efikasnog presjeka za duboko neelastično rasijanje elektrona (pozitrona) na protonu pri velikim vrijednostima neelastičnosti interakcije

**2006-2007** Učešće u priprema seansi za  $e^+p$  interakcije sa redukovanim energijama protona sa HERA akceleratora (kroz analizu tada postojećih eksperimentalnih podataka)

**2007-2011** Mjerjenje longitudinalne strukturne funkcije protona

**2017- Član međunarodne istraživačke kolaboracije eksperimenta CMS** u laboratoriji CERN u Ženevi, Švajcarska (akcelerator LHC)

**2017 – Analiza produkcije Drell-Yan parova u proton-proton interakcijama.**

### **Projekti (sa rukovodećom ulogom)**

**2004–2007** Učesnik na međunarodnom projektu finansiranom od strane DFG-a (Deutsche Forchungsgemeinschaft): „Präzisionsmessungen und Analyse der Elektron-Quark-Wechselwirkung bei höchsten Energien sowie Suche nach Phänomenen außerhalb des Standardmodells”, broj GZ:436JUG113/3/0-1, odobren 2007. godine (partnerske strane: Univerzitet Crne Gore, institut DESY u Hamburgu, institut DESY-Zeuthenu u Berlinu i institut Max Planck u Minhenu).

**2007–2010** Produžetak prethodnog projekta od DFG, pod brojem GZ:436JUG113/3/0-2

**2005–2007** Rukovodilac naučno-istraživačkog projekta odobrenog od Ministarstva prosvjete i nauke Crne Gore „H1 eksperiment na HERA akceleratoru”

**2008–2011** - Rukovodilac naučno-istraživačkog projekta odobrenog od Ministarstva prosvjete i nauke Crne Gore „Duboko neelastično rasijanje elektrona (pozitrona) na protonu”

**2012-2015** - Rukovodilac naučno-istraživačkog projekta odobrenog od Ministarstva nauke Crne Gore „Završna faza analiza H1 kolaboracije”.

**2019 – 2023** – Ključni partner u projektu odobrenog u program **HORIZONT2020 „The strong interaction at the frontier of knowledge: fundamental research and applications”**.

### **Učešće u radu upravljačkih struktura velikih kolaboracija**

**2004–2012** učešće u radu Upravnog odbora H1 kolaboracije koji donosi najvažnije odluke za kolaboraciju

**2007–2009** član Izvršnog odbora H1 kolaboracije

**2012-2014** član Upravnog odbora H1 kolaboracije

**2017-** član Upravnog odbora CMS kolaboracije

### **Učešće u radu tijela/centara čiji je rad povezan sa obrazovanjem**

**2015-2017** – član Nacionalnog savjeta za obrazovnje Crne Gore

**2015-2017** – član Odbora za obrazovnje Crne Gore

**Od 2015** – član Centra za studije i kontrolu kvaliteta Univerziteta Crne Gore

**Od 2015** – član Odbora za monitoring magistarskih studija Univerziteta Crne Gore

**Od 2016** – član Vijeća za prirodne i tehničke nauke Univerziteta Crne Gore

### **Informatička pismenost**

Operativni sistemi: UNIX i WINDOWS

Programski jezici: fortan, C, python

## Nataša Raičević

### Bibliografija

#### Odabrani radovi

1. Fast simulation of electromagnetic and hadronic showers in SpaCal calorimeter at the H1 experiment, AIP Conf.Proc. 1722 (2016) 210003. \*\*
2. Combination of measurements of inclusive deep inelastic  $e^\pm p$  scattering cross sections and QCD analysis of HERA data, Eur.Phys.J. C75 (2015) no.12, 580.
3. N. Raičević, Recent Results from HERA on the Proton Structure, Acta Phys.Polon.Supp. 7 (2014) 3, 439. \*\*
4. N. Raičević, Precision Tests of QCD at HERA, Acta Phys.Polon.Supp. 6 (2013) 3, 985. \*\*
5. N. Raičević, A. Glazov and A. Zhokin, Shower library technique for fast simulation of showers in calorimeters of the H1 experiment., Nucl.Instrum.Meth. A718 (2013) 104.
6. N. Raičević, Measurement of the diffractive DIS cross section at the H1 experiment, Rom. Rep. Phys. 65 (2013) 427. \*\*
7. N. Raičević, Precision measurement of the proton structure at HERA, Rom.Rep. Phys. 65 (2013) 103. \*\*
8. H1 Collaboration (F. D. Aaron,..N. Raičević *et al.*), Measurement of the Inclusive  $ep$  Scattering Cross Section at High Inelasticity  $y$  and of the Structure Function  $F_L$ , Eur. Phys. J. C71 (2011) 1579.
9. A. Glazov, N. Raičević and A. Zhokin, Fast simulation of showers in the H1 calorimeter, Comput. Phys. Commun. 181 (2010) 1008.
10. N. Raičević, Measurements at high  $Q^2$  and searches at the  $ep$  energy frontier, Nucl. Phys. Proc. Suppl. 207-208 (2010) 125. \*\*

11. N. Raičević, HERA results and their impact for LHC, Nucl. Phys. Proc. Suppl. 198: (2010) 75. \*\*
12. N. Raičević, Measurement of proton structure and parton density functions from HERA, AIP Con. Proc. 1203 (2010) 85. \*\*
13. N. Raičević, Measurement of the proton structure function  $F_L(x, Q^{**2})$  with the H1 experiment, AIP Con. Proc. 1203 (2010) 79. \*\*
14. H1 Collaboration (F. D. Aaron,..N. Raičević *et al.*), A Precision Measurement of the Inclusive ep Scattering Cross Section at HERA, Eur. Phys. J. C64 (2009) 561.
15. N. Raičević, Proton structure and QCD dynamics at low x, Nucl. Phys. Proc. Suppl. 181-182 (2008) 57. \*\*
16. N. Raičević, Measurement of the neutral current DIS cross section at H1, J. Phys. Con. Ser. 110 (2008) 022042. \*\*
17. H1 Collaboration (F. D. Aaron,..N. Raičević *et al.*), Measurement of the Proton Structure Function  $F_L(x, Q^2)$  at Low x, Phys. Lett. B665 (2008) 139.
18. N. Raičević, Measurement of the longitudinal structure function from e p collisions with the H1 detector at HERA, AIP Con. Proc. 899 (2007) 575. \*\*
19. N. Raičević, Measurement of the inclusive e p deep inelastic scattering cross section at low  $Q^2$  with the H1 detector at HERA, AIP Con. Proc. 899 (2007) 217. \*\*
20. CERES/NA45 Collaboration (G. Agakichiev,..N. Saveljić et al.),  $e^+e^-$  pair production in Pb-Au collisions at 158-GeV per nucleon, Eur. Phys. J. C41 (2005) 475.
21. CERES/NA45 Collaboration (G. Agakichiev,..N. Saveljić et al.), Recent results from Pb - Au collisions at 158-GeV/c per nucleon obtained with the CERES spectrometer, Nucl. Phys. A 661 (1999) 23.
22. CERES/NA45 Collaboration (G. Agakichiev,..N. Saveljić et al.), CERES results on low mass electron pair production in Pb Au collisions, Nucl.Phys.A638 (1998) 159.
23. G. Agakishiev,.. ,N. Saveljić *et al.*, A New robust fitting algorithm for vertex reconstruction in the CERES experiment, Nucl. Instrum. Meth. A 394 (1997) 225.

## **Odabrani radovi u zbornicima međunarodnih konferencija**

24. N. Raičević, High  $y$  DIS cross section measurement with H1, Proceedings of 15<sup>th</sup> International Workshop on Deep-Inelastic Scattering and Related Subjects, Munich, Germany, April 2007, vol. 1, 293, editors: G. Grindhammer, K. Sachs. ISBN 978-3-935702-23-2.  
\*\*

25. N. Raičević, Structure functions and extractions of PDFs at HERA, Proceedings of 41<sup>st</sup> Rencontres de Moriond: QCD and Hadronic Interactions, La Thuile, Italy, 18-25 March 2006, 181, editors: Etienne Auge and Jean Tran Thanh. e-Print: hep-ex/0605050. \*\*

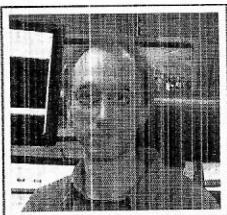
\*\* Radi se o publikacijama koje obuhvataju najzapaženije rezultate kolaboracija koji su predstavljeni na međunarodnim konferencijama, a koje je N. Raičević predstavljala u ime jedne ili više kolaboracija.

Svi navedeni kolaboracioni radovi su radovi sa preko 100 citata tzv. **TOPCITE:100+** u bazama podataka.

## **Kompletan lista od oko 140 referentnih radova u kojima je N. Raičević autor ili koautor nalazi se u bazi podataka na web-stranicama**

[https://inspirehep.net/search?ln=en&ln=en&p=find+a+n.+raicevic&of=hb&action\\_search=Search&sf=earliestdate&so=d&rm=&rg=25&sc=0](https://inspirehep.net/search?ln=en&ln=en&p=find+a+n.+raicevic&of=hb&action_search=Search&sf=earliestdate&so=d&rm=&rg=25&sc=0)

[https://inspirehep.net/search?ln=en&ln=en&p=find+a+n.+saveljic&of=hb&action\\_search=Search&sf=earliestdate&so=d&rm=&rg=25&sc=0](https://inspirehep.net/search?ln=en&ln=en&p=find+a+n.+saveljic&of=hb&action_search=Search&sf=earliestdate&so=d&rm=&rg=25&sc=0)



January 2021

# Laurent Favart

## Curriculum Vitae

### Professional Situation

- 1995-1997 **Postdoctoral Researcher at the Laboratoire de l'Accélérateur Linéaire, Orsay, France.**
- 1997-1999 **Postdoctoral Researcher FNRS, IIHE, ULB.**
- 1999-2009 **Research Associate FNRS, IIHE, ULB.**
- 2004- **Part-time Lecturer, ULB.**
- 2009-2014 **Senior Research Associate F.R.S.-FNRS, IIHE, ULB.**
- 2013- **Director of the Particle Physics Department, IIHE, ULB.**
- 2013- **IIHE co-director, ULB.**
- 2014- **Research Director, F.R.S.-FNRS, IIHE, ULB.**

### Formal Education

- 1989-1990 **Master 1 in Physics, Université Libre de Bruxelles, Belgium, magna cum laude.**
- 1990-1991 **Master 2 in Physics, Université Libre de Bruxelles, Belgium, summa cum laude.**
- 1991-1995 **PhD in Physics, Université Libre de Bruxelles, Belgium, summa cum laude.**  
Mesure de la fonction de structure  $F_2$  du proton à HERA, utilisant les interactions profondément inélastiques radiatives ( $\alpha^3$ ).

### Participation to High Energy Experiments

- 1992- Member of the H1 Collaboration at the HERA collider (DESY-Hamburg)
- 2011- Member of the CMS Collaboration at the LHC collider (CERN-Geneva)

### Teaching at the University

- PHYS-F305 Lecture : Introduction to Particle Physics (BA3 Physics, Th: 24h, Ex: 24h)
- PHYS-F477 Lecture : Physics of Strong Interactions (MA1 Physics, Th: 24h, Ex: 24h)

### University Administration

- 2009-2011 Secretary of the Jury - Master in Physics
- 2011-2014 President of the Jury - Master in Physics
- 2013-... Director of the Particle Physics Department

## Thesis Promotor

### PhD Promotor

- Rainer Stamen : "Measurement of Deeply Virtual Compton Scattering at HERA", (cotutelle - D. Wegener - Dortmund Universität (1998-2001).
- Benoît Roland : "Mesure de la diffusion Compton à haute virtualité à HERA II" (2002-2008, Boursier FRIA)
- Tomáš Hreus : "Studies of Diffractive Scattering of Photons at Large Momentum Transfer And of the VFPS Detector at HERA" (cotutelle University Pavol Jozef Šafárik à Košice, Slovaquie, Boursier FRIA, 2004-2008)
- Julie Delvax : "Etude de la production de jets en diffraction à HERA, à l'aide du spectromètre à protons VFPS", (Bourse FNRS 2006-2010).
- Alexandre Léonard : "Measurement of Z boson production in association with jets at the LHC and study of a DAQ system for the triple-GEM detector in view of the CMS upgrade", June 2015, (Aspirant FNRS 2011-2015).
- Fengwangdong Zhang : "Measurement of jet production in association with a  $Z$  boson at the LHC and jet energy correction and calibration at high level trigger in CMS", June 2017, Co-Phd with Peking University (Bourse CSC 2014-2017).
- Qun Wang : "Measurement of the differential cross section of  $Z$  boson production in association with jets at the LHC", June 2018, Co-PhD with Peking University (Bourse CSC 2015-2017)
- Louis Moureaux, CMS data analysis, bourse FRIA 2017-
- Tomas Kello, CMS data analysis, bourse EOS - cotutelle UA 2018-
- Max Vanden Bemden, CMS data analysis and Proton Transverse Momentum Distributions, assistant ULB 2019-
- Itana Bubanja, Study of the Drell-Yan process at the LHC, cotutelle ULB-Montenegro 2020-

### Master Thesis Promotor

- Alexandre Rechner : "Analyse du détecteur à fibres scintillantes prévu pour le spectromètre à protons de l'expérience H1", June 2001.
- Sandrine Cnockaert : "Production diffractive de mésons vecteurs à HERA", (co-direction avec P. Marage), June 2002.
- Tomáš Hreus : "Photon diffractive scattering off proton at high  $t$  with the H1 detector", (Erasmus 2003-2004) - June 2004.
- Julie Delvax : "Etude des interactions avec production de jets dans l'expérience H1", June 2006.
- Alexandre Léonard, "Production diffractive de mésons  $\rho$  à HERA II", June 2011, Prix A.Sc.Br. 2011.
- Rachel Simoni, "Etude de la production de  $Z$  accompagnée de jets au LHC", September 2013.
- Patrick Connor, "Etude du processus de Drell-Yan à haute masse invariante au LHC à  $\sqrt{s} = 8$  TeV", June 2014
- Laurent Lenaerts, "Etude de la section efficace Drell-Yan à faible impulsion transverse du boson  $Z$  dans les interactions proton-protons à  $\sqrt{s} = 8$  TeV", June 2015
- Louis Moureaux, "Etude de la production exclusive du meson  $\rho$  dans les données proton-plomb prises à CMS en 2013 à  $\sqrt{S_{NN}} = 5.02$  TeV", June 2017
- Max Vanden Bemden, "Study of the Proton Transverse Momentum Distributions with the Parton Branching Method", September 2019.

### PhD Jury Member outside ULB

- Grégory Soyez, "Deep inelastic scattering at small  $x$ ", Université de Liège, January 2004.
- Thibault Frisson, "Mesure de luminosité pour l'expérience H1 et étude de la diffusion Compton élastique", Ecole Polytechnique, Paris, October 2006.
- Sylvestre Baudrand, "Mesure de la polarisation longitudinale de faisceaux de positons et d'électrons à HERA par effet Compton à l'aide d'une cavité Fabry-Perot de haute finesse", Université de Paris-Sud, Orsay, January 2007.
- Maxime Gouzevitch, "Mesure de la constante de couplage forte  $\alpha_S$  avec les jets hadroniques en diffusion inélastique profonde", Ecole Polytechnique (Paris), September 2008.
- Ahmed Fradi, "Exclusive electroproduction of the  $\rho^+$  meson on the proton with the CLAS detector at Jefferson Lab", IPN -Université de Paris-Sud (Orsay), July 2009.
- Deniz Sunar, "Measurement of  $K^{*\pm}(892)$  Production in Deep Inelastic  $ep$  Scattering with the H1 Detector at HERA", Universiteit Antwerpen (Anvers), July 2009.
- Oldřich Kepka, "QCD and Diffraction in the ATLAS Experiment at the LHC", Université de Paris-Sud et Charles University, Orsay, November 2009.
- Séverine Ovyn, "Photoproduction of Top and Higgs Particles at the LHC", Université Catholique de Louvain, April 2010.
- Nikita Belyi, "Search for top s-quarks in bottom s-quark production in R-parity violating supersymmetric models with the CMS detector", Université de Mons, 4 December 2015.
- Laurent Forthomme, "Measurement of exclusive two-photon processes with dilepton final states in pp collisions at the LHC", PhD, Université catholique de Louvain, April 2016
- Matthias Saimpert, "Mesure de la section efficace de production de paires de photons isolés dans l'expérience ATLAS au LHC et étude des couplages à quatre photons", PhD, rapporteur, CEA/Orsay, 27 June 2016
- Alex Van Spilbeeck, "Study of the very forward jet energy spectrum in proton-proton collisions at  $\sqrt{s} = 7$  TeV with the CASTOR calorimeter at the CMS experiment", PhD, Universiteit Antwerpen (Anvers), June 2017
- Bugra Bilin, "Measurements of Standard Model heavy particle production in association with jets using proton-proton collision data at 8 and 13 TeV with the CMS experiment at the LHC", PhD, Middle East Technical University, Turkey, June 2017
- Brieuc François, "Search for resonant di-Higgs production in CMS and development of a model independent approach to look for new physics at the LHC", PhD, Université catholique de Louvain, October 2017.

### Expert and Consultancy Mandates

- 1996- Internal Referee for the H1 and CMS Collaborations
- 1999- Referee for International Journals: Eur. Phys. J. Can. J. Phys. and Braz. Jour. Phys.
- 2010-2012 Member of the "SPS and PS experiments Committee (SPSC)" du CERN.
- 2012- Member of the H1 Physics Board
- 2012- Representative of the FNRS at the "International Oversight and Finance Group" (IOFG) of the IceCube experiment.
- 2012- Member of the Belgian CERN Associates and Fellows committee.
- 2013-2020 Official Representative of the FNRS at the "Astroparticle Physics European Consortium" (ApPEC).
- 2016- Member of the CMS Publication Committee Board on Forward & Small-x QCD physics (FSQ) and Detector and reconstruction performance (PRF)

2019-	FNRS representation in the Finance Board of the Pierre Auger Collaboration
2019-	Membre of the FRIA jury
2021-	Membre of the ULB university ranking commission

## Awards and Honours

Ph.D. Award 1995 from the Friends and Sponsors of DESY DESY ("Verein der Freunde und Förderer des DESY")

## Publications

Among the 500 international Journal publications with peer review since 1992, the most representative are:

- o C. Adloff et al. [H1 Collaboration], "Elastic photoproduction of  $J/\psi$  and  $\Upsilon$  mesons at HERA", *Phys. Lett.* **B483** (2000), 23-35
- o C. Adloff et al. [H1 Collaboration], "Deep-inelastic inclusive  $ep$  scattering at low  $x$  and a determination of  $\alpha_s$ ", *Eur. Phys. J.* **C21** (2001), 33-61
- o C. Adloff et al. [H1 Collaboration], "Measurement of deeply virtual Compton scattering at HERA", *Phys. Lett.* **B517** (2001), 47-58
- o L. Favart, M.V.T. Machado, "Deeply virtual Compton scattering and saturation approach", *Eur. Phys. J.* **C29**, 365-371 (2003).
- o A. Aktas et al. [H1 Collaboration], "Diffractive deep-inelastic scattering with a leading proton at HERA", *Eur. Phys. J.* **C48** (2006), 749-766
- o L. Favart, M. V. T. Machado and L. Schoeffel, "An extraction of the skewing factor from DESY-HERA Data", *Braz. J. Phys.* **37** (2007) 798-800.
- o F. D. Aaron et al. [H1 Collaboration], "Measurement of Deeply Virtual Compton Scattering and its  $t$ -dependence at HERA," *Phys. Lett.* **B659** (2008), 796-806
- o F. D. Aaron et al. [H1 Collaboration], "Diffractive electroproduction of  $\rho$  and  $\phi$  mesons at HERA", *JHEP* **1005** (2010), 032
- o A. Astvatsaturov, K. Cerny, J. Delvax, L. Favart, T. Hreus, X. Janssen, R. Roosen and T. Sykora, P. Van Mechelen, "The H1 very forward proton spectrometer at HERA", *Nucl. Instrum. Methods A* **736** (2014), 46-65
- o V. Andreev et al. [H1 Collaboration], "Diffractive Dijet Production with a Leading Proton in  $ep$  Collisions at HERA", *JHEP* **1505** (2015), 056 [arXiv:1502.01683].
- o Khachatryan, Vardan, et al. [CMS Collaboration], "Measurements of the differential production cross sections for a Z boson in association with jets in  $pp$  collisions at  $\sqrt{s} = 8$  TeV", *JHEP* **1704** (2017), 022 [arXiv:1611.03844].
- o L. Favart, M. Guidal, T. Horn and P. Kroll, "Deeply Virtual Meson Production on the nucleon", *Eur. Phys. J. A* (2016) 52:158 arXiv:1511.04535 [hep-ph].
- o [CMS Collaboration], "Measurement of differential cross sections for Z boson production in association with jets in proton-proton collisions at  $\sqrt{s} = 13$  TeV", *Eur. Phys. J.* **C78** (2018), 965 arXiv:1804.05252 [hep-ex].
- o [CMS Collaboration], "Measurement of exclusive  $\rho^0(770)$  photoproduction in ultraperipheral pPb collisions at  $\sqrt{s_{NN}} = 5.02$  TeV", *Eur. Phys. J. C* **79** (2019) 702, arXiv:1902.01339 [hep-ex].
- o J. D'Hondt, L. Favart and F. Maltoni, "Research activities in Fundamental Interactions, from Elementary Particles to Cosmology, in Belgium", in the BNCPAP serie - Royal Academies for Science and the Arts of Belgium BPnly (2019) - to be published
- o V. Andreev et al. [H1 Collaboration], 'Measurement of Exclusive  $\pi^+\pi^-$  and  $\rho^0$  Meson Photoproduction at HERA", arXiv:2005.14471 [hep-ex], DESY-20-080.

## Oral Communications

Among the 45 oral communications at conferences and seminars, the most representative are :

- o "Diffractive Physics at HERA", review talk at the "International Nuclear Physics Conference 1998 (INPC98)", 24–28 Augustus 1998, UNESCO, Paris, France.
- o "Deeply Inelastic Compton Scattering at HERA", XXX<sup>th</sup> International Conference on High Energy Physics (ICHEP 2000), Osaka, Japan, 27 July -2 Augustus 2000.
- o "Inelastic scattering and diffraction at high energy - HERA results", lecture for the "European Graduate School Basel-Tübingen", Universität Tübingen, 14 May 2004.
- o "Experimental review of diffractive phenomena", invited plenary talk at the 10<sup>th</sup> International Baryons Conference (BARYONS 2004), Paris, 25-29 October 2004.
- o "Diffraction and Vector Mesons: Session Summary", WG session summary talk at the 15<sup>th</sup> International workshop on Deep-Inelastic Scattering (DIS 2007), Munich (D), 16-20 April 2007.
- o "Inclusive diffraction and a measurement of the diffractive longitudinal structure function  $F_L^D$  at HERA", 2009 Europhysics Conference on High Energy Physics Search (EPS HEP-09), Cracovie, Pologne, 16-22 July 2009.
- o "Physics at Accelerators", RECFA - open session, Brussels, 5 March 2010.
- o "Exclusive electroproduction of vector mesons", 14th Workshop on Elastic and Diffractive Scattering (EDS Blois Workshop), Quy Nhon, Vietnam - 15-21 December 2011.
- o "Recent Results on Diffraction at HERA", Workshop on Multi-Parton Interactions at the LHC (MPI@LHC 2013), Antwerp, Belgium, 2-6 December 2013
- o "Parton Distribution Functions and Low  $x$  Physics", lecture at the "Joint Belgian Dutch German Graduate School (BND 2014)", Rolduc Abbey, Kerkrade (NL), 27-28 September 2014.
- o "Recent HERA results on hard diffraction", LISHEP 2015 conference, Manaus (Brazil), 2-9 Augustus 2015.
- o "Low- $x$  and Diffraction", invited plenary talk, 24<sup>th</sup> International workshop on Deep-Inelastic Scattering (DIS 2016) Hamburg (D), 11-15 April 2016.
- o "Workshop on Resummation, Evolution, Factorization (REF2016)", member of Organizing and scientific committees, Antwerp (B), 7-10 November 2016.
- o "Belgium HEP Overview", RECFA - open session, Brussels, 21 April 2017.
- o "High Energy Physics in Belgium", ESS Science Seminar in Belgium, Brussels, 14 September 2017.