

Alice Dechambre

Curriculum vitae



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16 février 2011

Personal Information

Birth date October 1st, 1982

Sex Female

Nationality Belgian

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Degrees

2010-2011 **Post-Doc**, IFPA Université de Liège (Belgium). One year visitor to the CEA-Saclay (France) : Institut de Physique Theorique (IPhT) and Service de Physique des Particules (SPP).

2005-2010 **Ph.D**, Université de Liège (Belgium).
July 15th, 2010

Ph.D Thesis : **Quasi-Elastic Production at Hadronic Colliders**

Advisor : J.R Cudell, Chargé de cours adjoint

Quasi-elastic production is usually viewed as a golden signal for the detection of objects such as the Higgs boson(s) or exotic particles and this is due to the very clean final state and the lack of hadronic remnants after the interaction. In view of the recent data from CDF Run II, we critically re-evaluated the standard approach to the calculation of quasi-elastic cross sections in the high-energy limit and evaluated the uncertainties that affect this kind of processes. The main idea of this work was to understand the various ingredients that enter the calculation and the uncertainties coming from each of them. We studied and narrowed down these uncertainties using available data on dijets quasi-elastic event at the TeVatron. All the arguments developed apply to high-mass central systems and lead to a prediction of the Higgs quasi-elastic cross section at the LHC energies.

Member of the jury :

Prof. Joseph Cugnon

Igor P. Ivanov

Christophe Royon

Prof. Jeff Forshaw

President of the jury : Pierre Dauby

2006 **Diplôme d'Etudes Approfondies (DEA : Third cycle degree) in Physics with the Most Highest Honors**, Université de Liège.
Belgium
Graduate Thesis :

Aspects of Diffractive Physics
Introduction of Non-perturbative effects
Advisor : J.R. Cudell, Chargé de cours adjoint

2005 **Graduate in Physics with Highest Honors**, Université de Liège.
Belgium
Undergraduate Dissertation :

La recherche de l'antimatière dans l'Univers
Advisor : J. Cugnon, Professeur ordinaire

2003 **Candidate (B.A.) in Physics with Honors**, Université de Liège.
Belgium.

Languages

French	Excellent	Native Speaker
English	Fluent	Command of the language, reading, speaking and listening, knowledge of the technical jargon
Spanish	Elementary	Good reading and listening skills

Computer Skills

Operating Systems	Linux (Scientific Linux, Ubuntu), Windows
Programming	Fortran 77, Pascal, Reduce, some C++
Word and Data Processing	L ^A T _E X, Beamer, OpenOffice, Word, Excel, Origin, Midas, Root, Pythia

Research

2009-2011 **Collaboration with the CEA-Saclay**, *Theoretical development of exclusive processes and implementation in the Monte-Carlo FPMC, IPhT and SPP Groups.*

2008 **Collaboration with the Université Catholique de Louvain**, *Test of a framework for fast simulation of a generic collider experiment : DELPHES.*

DEVELOPED TOPICS :

- Complete program for exclusive cross section, from parton production to the event (CMS or other + forward detectors FP420).
- Hadronization with PYTHIA, smearing with DELPHES, cone algorithms and event display with FROG.

2005-2011 **IFPA member**, *Group of Fundamental Interactions in Physics and Astrophysics.*

Teaching

- 2005-Today **Teaching Assistant at the Université de Liège**, Laboratory of physics to students in sciences, science of life and medicine ; recitations in physics to medical students and students in physiotherapy, 150 h/year ~ recitation 100h, laboratory 50h.
Taking part in oral examinations and preparation of exams
- September 2007 **Quantum Field Theory Tutorial**, *19th Annual Joint Belgian-Dutch-German Graduate School of Particle Physics*, discussion sessions on Quantum Field Theory (8 hours), Spa, Belgium.

Outreach

2010 **Referee for Physical Review D.**

2006-2010 **Member of the Doctoral School Comittee**, *Ph.D Students representative*, Ecole Doctorale Thématique PandA.

2006 **Printemps des Sciences**, presentation to the general public : De l'atome aux particules (From atoms to particles), Liège, Belgium.

External consultant, *interview : "L'antimatière"*, Author : Sébastien Mostenne, interview and discussion that led to an article and a short movie as part of a Master in Information and Communication, option written press and television in the science sector, Université de Liège.

Others **Pedagogical Background**, workshops in Science and Art with children from 2 to 18 years old, ASBL PARI and Ecole de Clerheid.

Background

- During the Ph.D Quantum Field Theory ; QCD for LHC ; LHC Physic ; Monte-Carlo simulations
- Master Studies Mathematics ; Statistics and data analysis ; Quantum mechanics ; Physical chemistry ; Electronics, data acquisition and analysis ; Mechanics of continuous media ; Particles and nuclei ; Electrons, atoms and molecules ; Statistical physics ; Physical biology ; General astrophysics ; Quantum field theory ; Relativity and cosmology ; Solid state ; Physics of the atmosphere and Earth environment ; Group theory ; Particles ; Atomic physics, Nuclear physics and radiation detection ; Quantum optics.