

ANTOINE BOURGET

PERSONAL INFORMATION

Born in Colombes (France), 3 January 1989

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WORK EXPERIENCE

2013–Present PhD student, ENS — Paris

Worked in high energy and theoretical physics as a PhD student in the *Laboratoire de Physique Théorique de l'École Normale Supérieure*. My main research interests are in supersymmetric gauge theories, mathematical physics and string theory. Advisor : Jan Troost · troost@lpt.ens.fr

2011–Present MINISTRY OF ECONOMIC AFFAIRS — Paris

State Engineer of the Mines (*ingénieur du Corps des Mines*).

2011–2012 Research Engineer, FASTLITE — Orsay

One full year internship in a technological start-up (www.fastlite.com). Developed pulse-shaping devices based on acousto-optic interactions inside birefringent crystals and nonlinear optics to shorten the duration of impulses emitted by femtosecond lasers.

2011 Research Internship, ENS — Paris

Three month internship in *Laboratoire de Physique Théorique de l'École Normale Supérieure* under the supervision of John ILIOPOULOS. The main topic was the Higgs mechanism in quantum field theory. We also computed some branching ratios and investigated the technological constraints in the LHC detectors to find the most promising channel.

TEACHING

2014–Present TA in QUANTUM MECHANICS

Giving exercise classes for students majoring in Physics at ENS (L3 year) as part of the lecture by Frédéric CHEVY.

2015 TA in GENERAL RELATIVITY

Giving exercise classes for students majoring in Physics at ENS (Master 1) as part of the lecture by Gilles ESPOSITO-FARÈSE.

2014–Present PHYSICS FOR EVERYONE

This course is designed for non scientific students at ENS, and aims at introducing the fundamental concepts of modern physics. I am in charge of the part concerning cosmology and black holes.

2012–2015 Various interventions in CLASSES PRÉPARATOIRES

This includes oral examinations (*colles*) for students in Lycées Louis-le-Grand and Saint-Louis, interventions to present extra-curricular topics, and special preparation for competitive exams.

EDUCATION

2012–2013 École Normale Supérieure, Paris

With High Honours · International Center for Fundamental Physics master.
Lectures include Quantum Field Theory, Statistical Field Theory, General Relativity, String Theory, Group Theory, Supersymmetry and Exactly Solvable Models.

2011–2012 École Nationale Supérieure des Mines, Paris

Admission to the *Corps des Mines* (rank 3). Formation in Accounting, Law, Economics and Public Policy.

2008–2012 École Polytechnique, Palaiseau

GPA: 4.0 · *First Class Honours* · Admission in a top French Engineering school and research centre (rank 2). Major in Mathematics and Theoretical Physics.

PUBLICATIONS

- AB and Jan Troost, *Duality and modularity in elliptic integrable systems and vacua of $\mathcal{N} = 1^*$ gauge theories*, JHEP **1504** (2015) 128.
- AB and Jan Troost, *Counting the massive vacua of $\mathcal{N} = 1^*$ super Yang-Mills theory*, JHEP **1508** (2015) 106.
- AB and Jan Troost, *On the $\mathcal{N} = 1^*$ Gauge Theory on a Circle and Elliptic Integrable Systems*, JHEP **01** (2016) 097.
- AB and Jan Troost, *The Covariant Chiral Ring*, JHEP **03** (2016) 163.
- AB and Jan Troost, *Algebraic aspects of superconformal multiplets*, in preparation.
- AB and Jan Troost, *The Arithmetic of Supersymmetric Vacua*, [arxiv:1606.01022].

LANGUAGES

FRENCH · Mother tongue

ENGLISH · Fluent

SPANISH · Intermediate

CHINESE · Intermediate

CUED SPEECH · Fluent

INTERESTS AND OTHER ACTIVITIES

Piano (12 years under the supervision of Pr. Anne GOLDENBERG) · Scientific popularization · European and World History · Orienteering

2013–2015 TALENS association

Teaching maths and physics classes to highschool students with high potential as a member of a volunteer organization at ENS. Lectures on a weekly basis supplemented by a full week in summer.

June 27, 2016