

# ANTOINE BOURGET

## PERSONAL INFORMATION

Born in Colombes (France), 3 January 1989

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## WORK EXPERIENCE

*2016–Present* Postdoctoral researcher, UNIVERSITY OF OVIEDO – Spain

Member of the High Energy Physics Theory Group. Working on string theory and quantum field theories.

*2013–2016* PhD in theoretical Physics, ENS – Paris

Member of the *Laboratoire de Physique Théorique de l'École Normale Supérieure*. Worked on supersymmetric gauge theories, mathematical physics and string theory.

*2011–2016* 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](http://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. Thesis: *The Higgs mechanism in Quantum Field Theory*.

## EDUCATION

*2013–2016* PhD in theoretical Physics, ENS – Paris

*Mention très bien avec les félicitations du jury.*

Thesis: *Modularity and Vacua in  $\mathcal{N} = 1^*$  Supersymmetric Gauge Theories*.

Advisor: Jan TROOST.

*2012–2013* Master in theoretical Physics, ENS – Paris

*With High Honours* · International Center for Fundamental Physics master.

*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.

## TEACHING

### 2014–2016 TA in QUANTUM MECHANICS

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

### 2015–2016 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.

### 2014–2016 PHYSICS FOR EVERYONE

This course is designed for non scientific students at ENS, and aims at introducing the fundamental concepts of modern 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, *The Arithmetic of Supersymmetric Vacua*, JHEP **07** (2016) 036.
- AB and Jan Troost, *Permutations of Massive Vacua*, JHEP **1705** (2017) 042.
- AB and Alessandro Pini, *Non-Connected Gauge Groups and the Plethystic Program*, arxiv:1706.03781.

## LANGUAGES

FRENCH · Mothertongue

ENGLISH · Fluent

SPANISH · Fluent

CHINESE · Intermediate

## 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.

July 10, 2017