Sylvain Vanneste

CURRICULUM VITAE

Contact and details

Birth	Belgium
Mail	➢ sylvain.vanneste@gmail.com
Whatsapp	0032 475 73 25 53
Skype	darkynder

Communication skills

French	English	Arabic
Native	Fluent	Beginner

Education

2016 – 2019 — **Cosmology Physics**
Doctor - PhD
Laboratoire de l'Accélérateur Linéaire d'Orsay (LAL), France

References
➢ Matthieu Tristram
➢ Sophie Henrot-Versillé
➢ Thibaut Louis
➢ François Couchot

2014 – 2016 — **Particles & Cosmology**
Physics master diploma
Université Catholique de Louvain (UCL), Belgium

Degree
Great distinction
Promotion Salutatorian

References
➢ Jean-Marc Gerard
➢ Jan Govaerts
➢ Christophe Ringeval
➢ Fabio Maltoni

2011 – 2014 — **Engineering**
Bachelor diploma
Université Catholique de Louvain (UCL), Belgium

Work experience

Volunteer tutoring
2020
➢ *zupdeco.org*
Sciences and mathematics online volunteer tutoring during Covid19 pandemic.

Cosmology physics PhD Thesis
2016 - 2019
Laboratoire de l'Accélérateur Linéaire d'Orsay - LAL
(see next page)

University tutoring
2016 - 2019
Paris-Saclay University
• 76h : *C/C++* computing
• 46h : Continuum mechanics

Publisher, moderator, video editor
2014 - 2017
➢ *mrmondialisation.org*
➢ *facebook/M.Mondialisation*
Think tank ecohumanistic. Encourage debate and generate ideas freely from facts, videos, images.

Ecological volunteer
2015 – 2016
KAP Oasis LLN, Belgium
Volunteering for ecological, social, and voluntary simplicity lifestyle projects.

Work-camp project Leader
2009, 2011, 2014, 2015
➢ *compagnonsbatisseurs.be*
Supervising groups of volunteers in work-camps (Spain, Belgium, Germany, Italy)

Field hockey coach
2015 – 2016
➢ *LLN Hockey Club*
Training & coaching little fellows and older ones.

PhD - Cosmology Physic

Title	**B-modes measurements in the Cosmic Microwave Background**
Supervisors	➢ Matthieu Tristram ➢ Sophie Henrot-Versillé

Access ➢ tel.archives-ouvertes.fr/tel-02426412#

We develop analysis pipeline and numerical tools to study the Cosmic Microwave Background (CMB) large angular scale polarisation data in order to measure the tensor-to-scalar inflationary parameter r and reionisation depth τ. The algorithms allow to clean the data from galactic foregrounds contaminations and to optimally estimate the power spectra. Application of our methods on the *Planck* satellite public data provides consistent and more robust results than other studies. In particular, these methods could be applied to upcoming experiments such as the *LiteBIRD* satellite.

Publications :

2018	Quadratic estimator for CMB cross-correlation (Phys. Rev. D 98, 103526)
2018	Comparison of results on Neff from various Planck likelihoods (arXiv: 1807.05003)
2019	Consistency of CMB experiments beyond cosmic variance (Phys. Rev. D 100, 023518)
2018	Thermal architecture for the QUBIC cryogenic receiver (arXiv:1811.02296)
✳	One publication refereed for MNRAS

Master Thesis Particle Physics

Title	**Higgs self coupling and mass models prediction**
Supervisors	➢ Jean-Marc Gerard
Access	➢ https://tinyurl.com/y3sv4jut

We review and extend models that constrain separately the Higgs mass, its trilinear self-couplings, as well as its quartic self-couplings. The frameworks are SuperSymmetric models, a superconnection model, a top quark induced model, and a couplings reduction model.

Programming & Software

Good level	Python, C/C++, Matlab, LaTeX
Intermediate	Bash, Shell, Mathematica, Java, Oz, VHDL, Geant4, Robotran, AppleScript, Brainfuck, Photoshop, AfterEffect.

Main education subjects

- Numerical computing, algorithms, methods, simulations,
- Cosmology, statistics, relativity, neutrinos, astroparticles, nuclear physics,
- Quantum mechanics, quantum fields theory, elementary particles, particle physics,
- Mathematical physics, group theory, symmetries,
- Experimental methods, data acquisitions,
- Mechanical engineering, fluids, thermodynamics, chemistry.

About me

I am highly interested in and fascinated by fundamental sciences, especially by physics. Driven by curiosity, my goal is always to understand the subject as a whole.

I also keep interests in a wide range of other topics. Biology, riddles & puzzles, arts, climatology, dances, ecology, psychology, Autechre, didgeridoo, piano, philosophy, IDM & psytrance musics, spirituality, climbing, water sports, Feynman, space engineering, yoga, computing sciences, camper-van, video montage, ytp, Kurzgesagt, poï, woofing, and getting schwifty, are some of them.

I am strongly convinced that knowledge diversity, free times, and fostering of creativity, are keys solutions for an improved future.

I believe that learning and exploring is just as important as teaching and passing on knowledge to others. That is why I am myself seeking to teach.