

CURRICULUM VITAE OF DR. UMBERTO DE SANCTIS

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EDUCATION AND QUALIFICATIONS

University of Milan

Ph.D in Particle Physics **2008**

Thesis title: "Supersymmetry discovery potential in 2 leptons channel with ATLAS"

University of Milan

Master Degree in Physics **2005**

Thesis title: "Search for supersymmetric particles with ATLAS detector at LHC" Score: 110/110 cum laude

Abilitazione Scientifica Nazionale **2017**

Professore di 2^a fascia S.S.D 02/A1 2017-2023

WORKING EXPERIENCES

Ric. Tempo Det. – Tipo B, Università di Roma - Tor Vergata, Roma, IT

November 2018 – November 2021

Ric. Tempo Det., INFN, Sezione Roma - Tor Vergata, Roma, IT

November 2016 - November 2018

Main activities and responsibilities:

- Convener of the ATLAS Experiment B-Physics and Light States group (01/10-2017-30/09/2019)
- Measurement of the rare $B_s/B_d \rightarrow \mu\mu$ decays with Run2 data with the ATLAS Experiment
- Measurement of the CP violation in b-decays in top-antitop events
- Measurement of the top quark mass with soft-muons

Postdoctoral Research Assistant, University of Sussex, Brighton, UK

June 2014- September 2016

Main activities and responsibilities:

- Convener of the ATLAS Experiment Rare B-decays sub-group (01/04/2015-31/03/2017)
- Measurement of the rare $B_s/B_d \rightarrow \mu\mu$ decays with the ATLAS Experiment
- ATLAS Level-1 Topological trigger optimisation studies for B-physics channels for Run2
- Developer and responsible of the track fitting algorithm for the L1-Track trigger project for the Phase-II Upgrade of the ATLAS detector

CERN Associate, (Similfellow) CERN, Geneva, Switzerland

January 2012- December 2013

Main activities and responsibilities:

- Coordinator and main editor of the top quark charge asymmetry measurement in top-antitop events (semileptonic and dileptonic final states) in ATLAS.
- Responsible of the W/Z+jets background estimation for top analyses in ATLAS.
- Local responsible of the INFN-TRIESTE Tier3.

Postdoctoral Research Fellowship, International School for Advanced Studies

(S.I.S.S.A.), Trieste, Italy

May 2009- December 2011

Main activities and responsibilities:

- Top cross-section measurement in semileptonic channel with ATLAS detector.
- Top quark charge asymmetry measurement in top-antitop events with ATLAS detector.
- Work with theorists on spin determination of high-mass resonances and contact interactions in di-jets events.
- Realisation and maintenance of the INFN-TRIESTE Tier3.

PhD Studentship, University of Milan, Milan, Italy

November 2005- December 2008

Main activities and responsibilities:

- Supersymmetry searches in ATLAS.
- Software maintenance and tracking performance studies for the ATLAS Pixel detector

TEACHING EXPERIENCE

University of Rome-Tor Vergata

Supervisor of a Bachelor Degree thesis on Bs → J/psi Phi decay 2017-2018

University of Sussex

Teaching Assistant to Dr. E.Falk in “Nuclear and Particle Physics” 2015
Collaboration with Dr. A.Cerri to the supervision of two PhD student

University of Udine

Lecturer for a cycle of lectures on the Higgs Boson within the “Particle Physics”
course owned by Prof. M. Cobal 2011-2013**Supervisor of a Master Degree thesis on H→WW decay** 2011

University of Milan

Teaching Assistant to Dr. Attilio Andreazza in “C++ Computing” **2006-2007**

CERN

Main supervisor for 2 CERN Summer Student projects **2013- 2015**

- “Optimisation of Level 1 Topological Trigger Cuts for B-physics in ATLAS Detector”
- “Studies for the charge asymmetry measurement in top quark pair production in pp collisions at $\sqrt{s} = 8$ TeV using the ATLAS detector”

PROJECT PARTICIPATION

NPTEV-TQP2020 project: New phenomena at the TeV scale with Top quark
2016-now

Won a researcher position within this ERC-funded project.

Main areas of contribution:

- Development of the Soft Muon Tagging algorithm in Run2 data
- Measurement of the CP violation in b-decays from top-antitop events
- Measurement of the top quark mass with soft-muons

PRIN project: Fundamental interactions in the light of the Large Hadron Collider and the astro-particle physics **2010-2012**

Invited participation to the project.

Main areas of contribution:

- Spin determination of eventual new "Higgs-like" resonances (published in Phys. Rev. D84:015013, 2011).
- Searches for quark contact interactions at the LHC (published in Phys. Rev. D85 (2012) 114001, 2012)

OUTREACH ACTIVITIES

I participated, in the various institutions where I worked, to the CERN Physics Masterclass program for high-school students. I also participated to several exhibitions (such as the "Brighton Science Festival" or the "Night of Researchers") as responsible of one of the stands on the ATLAS experiment activities at LHC.

I participated to the organisation of the photographic exhibit “Beauty at colliders” held in Frascati for the “night of researchers”.

I also gave seminars to high-school students about the ATLAS experiment and more generally about Particle Physics.