

Federico Leo Redi

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Education

2013 – 2017 **PhD, Experimental High Energy Physics**; *Imperial College London, GB*

Supervisor: Prof *Andrey Golutvin*

Thesis – *Searching for Heavy Neutral Leptons at LHCb and SHiP*

2012 – 2013 **MSc, Physics**; *Imperial College London, GB*

Supervisor: Prof *Ulrik Egede*

Thesis – *Measurement of the D^0 production asymmetry in 7 TeV pp collisions*

2009 – 2012 **BSc, Physics**; *Imperial College London, GB*

Supervisor: Prof *Ulrik Egede*

Thesis – *Polarisation of J/Ψ mesons in pp collisions at 7 TeV at LHCb*

2002 – 2007 **Secondary school**; *Liceo Scientifico Copernico, Pavia, IT*

EQF lv 4: Physics, Mathematics, Latin, Italian, Philosophy, History, Art

Academic Experience

2013 – 2017 **PhD candidate, Experimental High Energy Physics**; *Imperial College London*

Primary force driving the studies of inclusive production of Heavy Neutral Leptons at the LHCb experiment

Joined the SHiP collaboration and validated the simulation software framework of the proposed SHiP experiment, gained experience with event generation (PYTHIA) as well as detector simulation (GEANT4)

Worked on the Lepton Flavour Universality testing measurement $R(D^*)$, i.e. the ratio between branching fractions $\mathcal{B}(\bar{B}^0 \rightarrow D^{*+} \tau^- \bar{\nu}_\tau) / \mathcal{B}(\bar{B}^0 \rightarrow D^{*+} \mu^- \bar{\nu}_\mu)$ (until 2015)

For the LHCb collaboration, developed the software trigger lines for future searches of long-lived Heavy Neutral Leptons

For the LHCb collaboration, carried out work on electron Particle Identification as a Rare Decay working group liaison

Summer 2013 **Master Thesis as a visiting student**; *University of Bologna*

Performed the measurement of the production asymmetry of D^0 mesons with an integrated luminosity of 1 fb^{-1}

Improved experimental and theoretical knowledge on CP violation measurements in charmed hadron decays as a probe for evidence of physics beyond the Standard Model

Summer 2012 **Undergraduate research opportunity**; *University of Bologna*

Undertook responsibilities in the group focused on the physics of charm mesons and on related CP violation measurements

Collaborated to the measurement of CP violation in $D^0 \rightarrow K^- K^+$ and $D^0 \rightarrow \pi^- \pi^+$ decays