

Particle physics exam

Master ENS-ICFP - 2017 - 2018

Instructions

1. Choose a paper in the list given at <https://users.lal.in2p3.fr/fredericmachefert/99-2/>
2. Send your choice by mail (frederic@cern.ch) before March 15th, 2018
3. Prepare a 10 minute presentation of the paper
 - presentation language: English or French
 - presentation technique: projector (a computer will be installed in the room, please provide your slides in pdf on a USB stick) or blackboard.
4. Hold your presentation on your assigned slot on March 29th, 2018. The exam will start from 9am, one oral presentation every 30 minutes.
5. Your presentation will be followed by about 15 minutes of questions on the paper, the lectures and the tutorials.

Papers

Title	Authors
The number of neutrinos	A. Blondel
Neutrino mass hierarchy (sections 1 and 2 only)	X. Qian et al.
Precision measurements and indirect determination of top and Higgs masses	A. Olchevski et al.
Search for the Standard Model Higgs boson in the diphoton decay channel with 4.9 fb ⁻¹ of pp collisions at $\sqrt{s} = 7\text{TeV}$ with ATLAS	ATLAS
Higgs Boson width in ZZ decays	F. Caola et al.
Measurement of the $B^0 - \bar{B}^0$ oscillation frequency Δm_d with the decays $B^0 \rightarrow D^- p^+$ and $B^0 \rightarrow J/\psi K^{*0}$	LHCb
Observation of J/ψ resonances consistent with pentaquark states in $\Lambda_b^0 \rightarrow J/\psi K^- p$ decays	LHCb
Energy correlations in e ⁺ e ⁻ annihilation and QCD	C. L. Basham et al.

Miscellanea

- The exam will cover the entire course: the lectures and the tutorials.
- Determine your preferred time slot for the exam and contact me before March 22th. We need to sort out the possible overlaps between the candidates.
- Do not worry about a closed door: we will ask you to come in.
- All papers are available on the web, on the same page as the lectures