Pietro Cortese

Curriculum vitae

BIO AND EDUCATION

MS in Physics obtained in 1996 at the Turin University in Alessandria, with the thesis "Calorimetri elettromagnetici ed adronici per esperimenti con ioni pesanti relativistici" (Electromagnetic and hadronic calorimeters for relativistic heavy ion experiments), Summa cum laude.
Corso di Perfezionamento in Fisica ed Astrofisica Nucleare e Subnucleare in 1997 at the Turin University
From 1998 to 2000: PhD in Physics at the Turin University with the thesis "J/Ψ, Ψ' and Drell-Yan production in proton-nucleus collisions at 450 GeV incident energy at the CERN SPS"
As of Jan 23, 2014 **National Scientific Qualification in the class** 02/A1 Experimental Physics of Fundamental Interactions – Associate professor

UNIVERSITY CAREER

2013-	Researcher, Università del Piemonte Orientale, DISIT
2004-2013	Technical researcher, Università del Piemonte Orientale, DISIT
2000-2004	Post-doc, Università del Piemonte Orientale, DISTA

UNIVERSITY POSITIONS

2015-	Member of the department communication commission
2013-2015	Member of the library commission
2004-2013	Member of the laboratory commission

SCIENTIFIC POSITIONS

2014-	Responsible of the upgrade of the DAQ system of the CERN ALICE ZDC detector
2011-	Deputy project leader of the ZDC detector of CERN ALICE experiment
2011-	Member of the Technical Board of ALICE experiment
2009-	Co-representative of the ZDC detector in the Computing Board of the ALICE experiment
1996-	Associate to the Istituto Nazionale di Fisica Nucleare. Research appointment as of 2014
1996-	Associate to the European Organization for Nuclear Research - CERN

MAIN FIELDS OF INTEREST

1. Nuclear physics: interactions of relativistic heavy ions, study of the quark-gluon plasma

2. Technology: development of detectors for nuclear and particle physics

CURRENT ISSUES OF RESEARCH

1. **Data analysis of Pb-Pb, p-p and p-Pb collisions collected in Run 1 and Run2 by the ALICE experiment at CERN LHC**

   The ALICE experiment at CERN LHC, starting form 2010, collected data from Pb-Pb (√s 2.76 and 5.02 TeV/nucleon), pp (0.9, 7, 8 and 13 TeV) and p-Pb collisions (5.02 TeV). In particular data from the internal tracking system ITS are used to reconstruct the tracks of the charged particles produced in the collisions, the information of the Zero Degree Calorimeters (ZDC) allows to determine the centrality of the collisions and the Muon Chambers (MCH) and Muon Trigger (MTR) systems are used to study the production of J/Ψ e Υ mesons.

2. **Maintainance and upgrade of detectors for the CERN ALICE experiment**
   The ALICE collaboration is preparing an upgrade of several detectors in order to exploit the opportunities given by the luminosity increase of LHC in RUN3 and RUN4. Tests are under way for the monolithic pixel detectors for the new tracker made of 7 cylinders around the interaction point that will be installed at CERN in 2020. This will be followed by mass production of the new ITS, tests and integration with the rest of the experimental apparatus. The acquisition system of the ITS and of the ZDC, together with the other detectors, will be upgraded in order to cope with the higher interaction rate that will reach 50 kHz in Pb-Pb collisions.

CURRENT FUNDED PROJECTS

PROGRAMME	FUNDED PROJECT
Large Hadron Collider Committee (LHCC) del CERN, Ginevra (CH); *Italian funding agency:* Istituto Nazionale di Fisica Nucleare, Frascati.	ALICE - A LARGE ION COLLIDER EXPERIMENT http://alice-collaboration.web.cern.ch/ *ALICE Collaboration built a detector dedicated to the study of heavy ion collisions in order to exploit the potential given by the high collision energy at LHC. The aim of the experiment is to study the physics of hadronic matter at extreme energy densities where the formation of a new state of matter, the quark-gluon plasma, is expected to occur. The existence of such a state and its properties are crucial to understand the confinement in QCD and the restoring of the chiral symmetry.*

TOP FIVE PAPERS

1. NA50 Collaboration, B. Alessandro et al., Charmonia and Drell-Yan production in proton-nucleus collisions at the CERN SPS, Phys. Lett. B553, 167 (2003).
2. NA50 Collaboration, B. Alessandro et al., A new measurement of J/ψ suppression in Pb-Pb collisions at 158 GeV per nucleon, Eur. Phys. J. C 39 (2005) 335

3. The ALICE Collaboration, K. Aamodt et al., The ALICE Experiment at the CERN LHC, 2008 JINST 3 S08002
4. NA60 Collaboration, R. Arnaldi et al., J/ψ production in proton–nucleus collisions at 158 and 400 GeV, Phys. Lett. B705 (2012) 263.
5. ALICE Collaboration, B. Abelev et al., J/ψ suppression at forward rapidity in Pb-Pb collisions at $\sqrt{s_{NN}}$ = 2.76 TeV, Phys. Rev. Lett. 109 (2012) 072301