1. Personal details

NAME Gianluigi Casse

DATE OF BIRTH
PLACE OF BIRTH
EDUCATION **PhD:** Université J. Fourier – Grenoble (FR)
Laurea in physics (110/110 cum laude) Faculty of Scienze Matematiche, Fisiche e Naturali, University of Torino
LANGUAGES Italian mother tongue, extremely fluent French and English, very good Spanish

EMPLOYMENT RECORD

2006 - today: Senior Principal Research Scientist, University of Liverpool, Department of Physics
2001: Principal Experimental Officer, University of Liverpool, Department of Physics
1998: Research Fellow, University of Liverpool, Department of Physics
1993: Scientific Associate, CERN, EP-MIC-SD

2. Position and roles

I am leading the detector group within Particle Physics (PP) in the University of Liverpool. This is the second biggest PP group in the UK with a strong focus on instrumentation and physics analysis in LHC experiments. The laboratory is equipped with a world-class clean room and maintains a leading role in silicon detector development and commissioning for various experiments. We have delivered the forward tracker for the ATLAS experiment and all modules for the LHCb-VELO experiment.

I have leading roles in research and procurement (both in the UK and internationally) of instrumentation for the upgrades of ATLAS and LHCb. I have been the work package leader for the development of the upgrade of the ATLAS Silicon Tracker and I am currently leading the planar pixel sensor group for the ATLAS Upgrade in the UK and, internationally, the design, specifications and procurement of the LHCb-VELO upgrade pixel detectors.

I am the Head of R&D for PP in Liverpool and I have been the first to promote the knowledge exchange of HEP technologies to medical and industrial applications.

I am the Co-Spokesperson of the CERN/RD50 experiment (~ 300 scientists worldwide) and I am member of the ICFA panel for instrumentation, to promote continuity of research in High Energy Physics detector and methods and for organising the strategy for the teaching of the subject.

3. Research and publications

3.1 Research activity

My activity has concentrated on instrumentation for particle physics experiments, especially Vertex and Tracker detectors for high luminosity colliders. In the past, I was involved in the conception and design of the silicon drift detectors for the ALICE experiments and the innermost

layer (L00) for CDF at Fermilab.
I have developed several solutions that have moved the detector technologies (in particular that of silicon sensors) beyond the accepted limits of the time.

I am the main scientist developing instrumentation based on silicon detectors for the PP group in Liverpool. In particular, I have designed the advanced detectors for the LHCb-VELO and supervised the procurement, qualification and production of the modules for this experiment. The VELO detector has been a major achievement for the group and it represents an example of a complex detector conceived and produced entirely within a single institute.

I have given a considerable contribution to push the detector technology to satisfying the stringent requirements of modern particle accelerators, like the LHC at CERN. I have a well-recognised status as international expert in this field, documented by numerous publications and leading positions in UK and internationally. Several results I have been pioneering have been implemented in major high energy physics experiments and concepts that I have proposed are currently baseline solutions for future large experiments.

I am leading the research strategy of the group, based on the anticipation of future requirements and technologies (for experiments and general applications). I am at the heart of the involvement of the Liverpool group in novel technologies (e.g. HV-CMOS that promises to be a serious candidate for inner tracking systems in e +-e- colliders as well as hadron machines).

3.2 Publications:

I am author or co-author of over 300 publications in refereed international scientific journals. I am a referee for several journals, editor of a book chapter, conference organiser, and reviewer of experiments.

Liverpool, 19/03/2015

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