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A Muon detector based on the μ RWell technology

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The Muon system of a FCC detector, both for the leptonic as well as for the hadronic collider, will have to cover an area of several thousands of square meters and possess accurate time and coordinate resolutions in order to provide a precise momentum resolution. The muon detector will also need to provide a standalone muon trigger, bunch crossing identification and be able to match muons stubs with tracks measured in the central tracker. Moreover, for FCC-hh the muon detector will have to operate at very high particle rates with a possible pileup up to 1000 events per beam crossing. We will present the requirements and the possible geometry of the muon detector for a FCC detector and discuss an implementation based on an innovative MPGD technology, the μ RWell, capable of meeting all these very challenging requirements at an affordable price tag. The main features of the μ RWell technology will also be summarised together with the results obtained at test beams and at irradiation facilities.

Primary author: GIACOMELLI, Paolo (INFN Sezione di Bologna)

Co-authors: DE OLIVEIRA, R. (CERN); RANIERI, Antonio (INFN Bari); DE FILIPPIS, Nicola (Politecnico e INFN Bari (IT)); ABBRESCIA, Marcello (Bari Physics Department and INFN); BELLAGAMBA, Lorenzo (Universita e INFN, Bologna (IT)); BORGONOV, Lisa (Universita e INFN, Bologna (IT)); BOSCHERINI, Davide (Universita e INFN, Bologna (IT)); BRAIBANT-GIACOMELLI, Sylvie (Universita e INFN, Bologna (IT)); CIBINETTO, Gianluigi (INFN Ferrara); FARINELLI, Riccardo (Universita e INFN, Ferrara (IT)); BENCIVENNI, Giovanni (INFN e Laboratori Nazionali di Frascati (IT)); FELICI, Giulietto (INFN e Laboratori Nazionali di Frascati (IT)); GATTA, Maurizio (INFN e Laboratori Nazionali di Frascati (IT)); GIOVANNETTI, M. (INFN LNF); MORELLO, Gianfranco (INFN e Laboratori Nazionali di Frascati (IT)); POLI LENER, Marco (INFN e Laboratori Nazionali di Frascati (IT)); MAGGIORA, Marco (Universita e INFN Torino (IT)); LAVEZZI, L. (IHEP); OCHI, Atsuhiko (Kobe University (JP))

Presenter: GIACOMELLI, Paolo (INFN Sezione di Bologna)

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