

Interactive comment on “Resistive plate chambers for tomography and radiography” by C. Thomay et al.

J. Albert (Referee)

jalbert@uvic.ca

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The authors have provided a concise writeup of their construction and commissioning of an RPC-based system for use in muon tomography. RPCs have the distinct advantage over scintillator-based systems constructed with equivalent resolution in that, for large areas, they typically can be made significantly cheaper; they have the disadvantage that they require a gas system (or at least occasional gas flushing). For very large systems for muon tomography, the benefits would almost certainly outweigh the disadvantages, as they tend to typically do for the very largest particle detector systems (muon chambers on large accelerator-based detectors, as an example).

My only significant comment involves ageing tests: many (most) RPC systems do age

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well, without suffering loss of efficiency (or resolution) over years of operation, but there have been noted examples where they have not (e.g. NIM A 508, 128 (2003)). What ageing tests have been done on these RPCs (especially in the case of only occasional gas flushing)? – have methods to accelerate the ageing process (beam / source tests, or long-term running at a higher voltage than the default) been attempted yet, or have any long-term studies at typical running conditions been done so far? If so, or if not, it might perhaps be worth mentioning that this has been, or will be, done.

The paper is an excellent one however and I believe it should be published as is, and updated to address my above comment only if the authors wish to.

Interactive comment on Geosci. Instrum. Method. Data Syst. Discuss., 2, 657, 2012.

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