MPGDs for Tracking and Muon Detection: Progress Review and Updated R&D Roadmap

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For the previous DPF Community Planning Exercise ("Snowmass 2013"), three colleagues and I contributed a short paper [1] that attempted to "outline a roadmap for further development of Micro-Pattern Gas Detectors (MPGDs) for tracking and muon detection in HEP experiments." The paper suggested various design and performance goals for continued R&D on MPGDs as well as key R&D directions.

For Snowmass 2021, I would like to briefly review the MPGD developments that actually occured in the time period 2013-21 and compare them against the goals laid out in the paper to gauge how closely the actual progress has followed the suggestions from 2013 and to determine if any of the goals have been achieved by now.

Based on the results and current considerations, I plan to revise the suggested goals and key R&D directions to help create an updated R&D roadmap for the next planning cycle.

References

[1] M. Hohlmann et al. "Micro-Pattern Gas Detectors for Charged-Particle Tracking and Muon Detection". In: *Community Summer Study 2013: Snowmass on the Mississippi*. June 2013. arXiv: 1306.1924 [physics.ins-det].

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