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Development of an Ideal Gaseous TPC Detector

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The Flexible, Ideal MPGD system (FIMS) is a collaborative effort to realize a detector whose performance is not limited by technology, but by the fundamental physics of particles interacting with matter. Designed to have applications spanning the extremes of gaseous TPC use-cases, the objective is to achieve ideal performance based on the metrics of: 3D spatial resolution, detection efficiency, and ion backflow. I will review the progress from the first year of this project, with particular attention to the design of the MPGD amplification structure to minimize the ion backflow.

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