

# UM Physics Department

## Miami 2020 Physics Conference (Online)

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**Title:** Construction of an RPC detector using additive manufacturing

**Abstract:**

Additive manufacturing is becoming adopted in the HEP instrumentation community for fast prototyping of ancillary services and parts. Given the latest technological improvements, cost-effective 3D printers can now achieve high-resolution, high-speed, and large printable area. In this work, we designed and fully printed an entire Resistive Plate Counter detector as a proof of concept to pave the road of what could be the next phase of the additive manufacturing revolution applied to HEP instrumentation. The bigger scope of this work extends HEP to impact industrial application of detectors such as security (cargo imaging and general-purpose scanners) and healthcare (tomography machines).