

Abstract Submitted  
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**Multigap Resistive Plate Chamber for Fast Timing** NATHANIEL LASHLEY-COLTHIRST, Howard University, MICKEY CHIU, Brookhaven National Lab — Over the summer, I worked in a group trying to increase the time resolution of a multigap resistive plate chamber (mRPC) detector to a ten picosecond resolution, compared to the 100 picosecond resolution that is typical today. With this much better resolution, particle identification will be possible out to much higher momenta than is possible today. To improve the mRPC, we intended to produce prototypes with many more gaps than the 6 that are currently used in the PHENIX TOF.W detector, and decrease the gap size. We tested production modules from the PHENIX TOF.W using cosmic rays, and designed the new prototypes which will be constructed at a later point.

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