

# Multigap RPCs in the STAR Experiment at RHIC

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A large-area ( $50 \text{ m}^2$ ) Time of Flight system has recently been installed in the STAR Experiment at RHIC. The detectors are Multigap Resistive Plate Chambers (MRPCs) and are digitized using custom electronics based on the CERN “NINO” and “HPTDC” chips. Several different prototype systems were built and operated in STAR from

2003 to 2005. The design and performance of the prototypes, as well as the ~70%-installed final system during the 2009 RHIC Run, will be presented. A possible future upgrade to the STAR Experiment is the so-called Muon Telescope Detector (MTD). This system will use very large MRPCs with double-ended strip readout to identify the

muons that pass through steel backlegs of the STAR magnet. The design of this system, and the performance of MTD prototype systems in a test beam and in STAR during several RHIC runs, will also be presented.

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