

SPINFEST STUDENT INTRODUCTION

Stacy Karthas

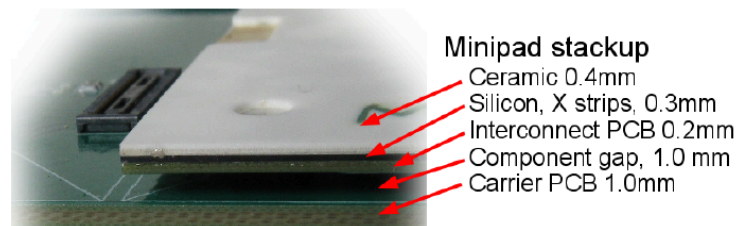
July 13, 2015

Introduction

- 2014
 - Graduated from University of New Hampshire with B.S. in Physics and Mathematics
 - Jefferson Lab physics research
 - Started graduate school at Stony Brook University
 - Started PHENIX work on MPC-EX
 - Advisor: Abhay Deshpande
 - Classes
- 2015
 - Took first 2 shifts at PHENIX
 - Started work on spin database quality assurance and more analysis work on MPC-EX (coordinate system)
- Hobbies
 - Running and biking
 - Hiking
 - Swing Dancing

MPC-EX micromodule testing

- Summer 2014
 - A finished micromodule:

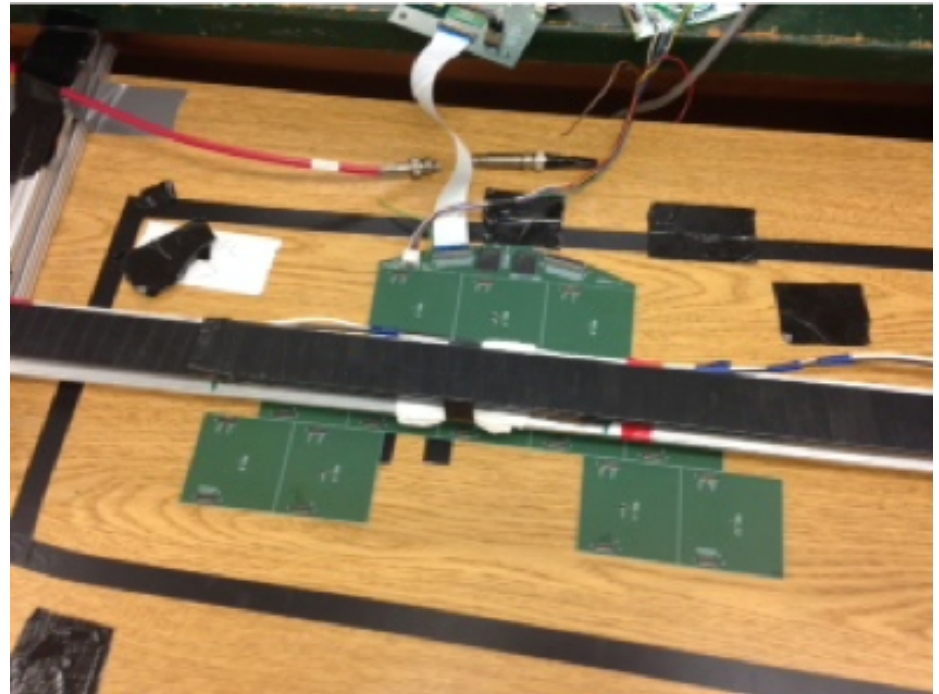


From MPC-EX Proposal

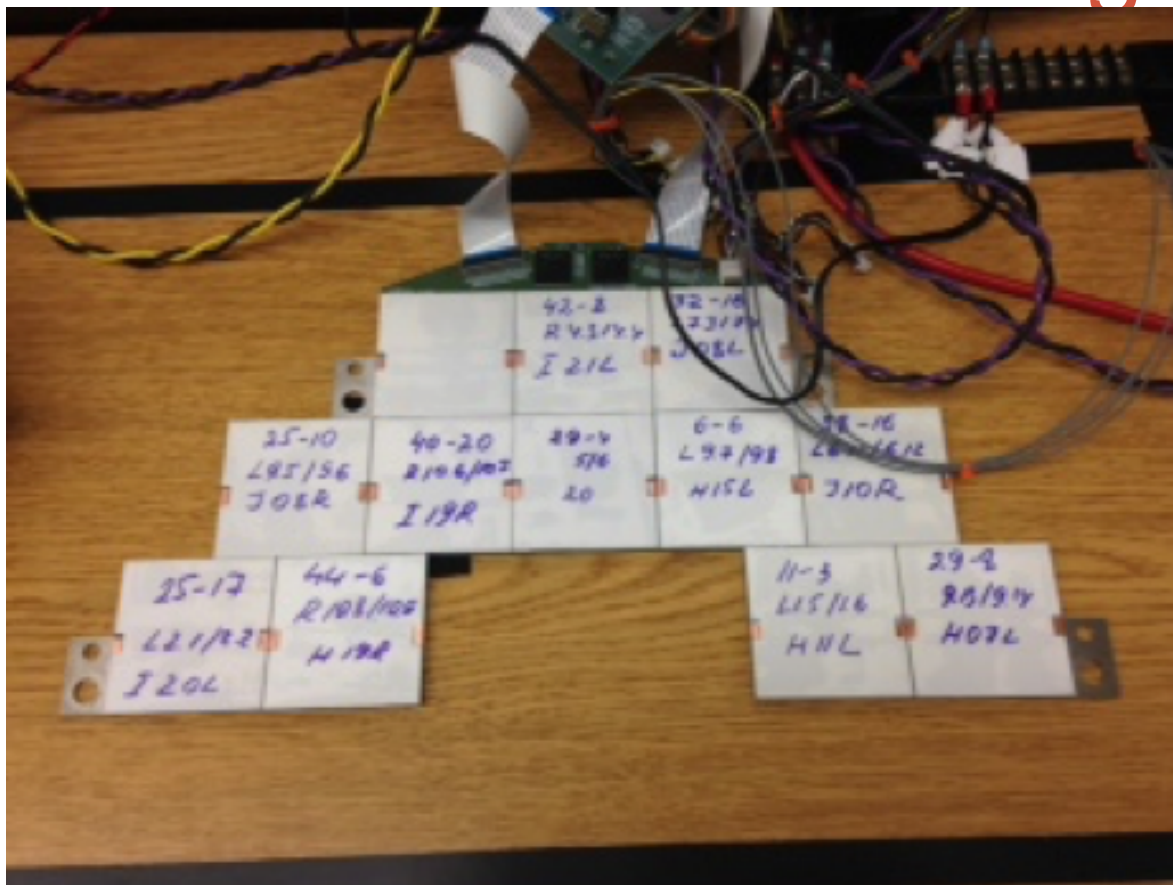
- Tested:
 - Channel number test: did the gui read each channel number properly
 - Testing current draw
 - Test pedestals with and without bias
 - If passed, went on to cosmic testing
 - If failed any test, was assessed further
 - Decided whether it was okay to use or if something could be done.

MPC-EX micromodule testing

- Additional testing if failed pedestal test
- Cosmic station with trigger
- Check for dead channels
- Check for MIP peak position



MPC-EX micromodule testing



- Full carrier board cosmic testing
- Began to stack carrier boards

Spin Database QA

- Checked fill consistencies
 - All runs are in the proper fill based on start times of fills and start/end times of runs
- Checked/checking crossing shifts and spin patterns
 - Consistency within fills
 - Consistency with CAD information
- To do:
 - Calculate real time polarization from pC measurements
 - More?

Future Goals in Spin Physics

- pA analysis for transverse single spin asymmetries using MPC-EX and MPC detectors. Far forward rapidity region
 - pA and pp asymmetries ratio to probe saturation scale of CGC.

$$\left. \frac{A_N^{pA \rightarrow h}}{A_N^{pp \rightarrow h}} \right|_{P_{h\perp}^2 \ll Q_s^2} \approx \frac{Q_{sp}^2}{Q_{sA}^2} e^{\frac{P_{h\perp}^2 \delta^2}{Q_{sp}^4}}$$

- As proposed by Kang and Yuan (arXiv:1106.1375).