Overview of Proposed Ohio State Participation

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May 28, 2014
Introduction

- Successfully built two generations of array-based optical links (opto-boards)
  - 1\textsuperscript{st} generation opto-boards built by OSU had failure rate of 0.1%
  - 2\textsuperscript{nd} generation opto-boards:
    - 90% installed
    - production/installation proceeded smoothly
  - propose to continue use of array-based solution for new pixel detector to satisfy space constraint
  - funded by CDRD for 10 Gb/s VCSEL array driver development
    - funded by NSF/MRI to acquire $0.5 M of equipment
    - well equipped to build high-speed optical links for HL-LHC
  - funded by three MRIs!
    - should help future funding for new pixel detector by NSF
FY14 Opto R&D Personnel

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>FTE</th>
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<tbody>
<tr>
<td>S. Smith</td>
<td>EE</td>
<td>0.40</td>
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<tr>
<td>J. Moore</td>
<td>EE</td>
<td>0.17</td>
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<tr>
<td>K.K. Gan</td>
<td>Physicist</td>
<td>0.20</td>
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<tr>
<td>R. Kass</td>
<td>Physicist</td>
<td>0.07</td>
</tr>
<tr>
<td>H. Kagan</td>
<td>Physicist</td>
<td>0.03</td>
</tr>
<tr>
<td>S. Che</td>
<td>Grad. student</td>
<td>0.20</td>
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<tr>
<td>A. Alvarez</td>
<td>Undergrad.</td>
<td>0.10</td>
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- will submit a renewal proposal for “CDRD” in a few months
- request US ATLAS support for FY15
Facility

- major equipment (mostly) funded 2 MRI awards:
  - high-bandwidth oscilloscopes
  - network analyzer
  - optical spectrum analyzer (OSA)
  - 2 probe stations
  - three automatic wire bonders, including ball/wedge capability
  - wire bond pull tester
  - precision vision measuring machine
  - high resolution infrared camera
  - fiber polisher/fusion splicer
  - humidity chamber

- physics department technicians/wire bonders ($40/hr)

- can help in the pixel module construction