

## A Study of Large Area Integrated Silicon Tracking Elements for the LHC Luminosity Upgrade

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A natural upgrade of the CERN LHC would be to increase the luminosity to  $10^{35} \text{ cm}^{-2}\text{s}^{-1}$ . For charged particle tracking at this Super-LHC, all-silicon systems are considered appropriate. For tracking in an upgraded ATLAS detector, outside a radius of 20 cm, large area integrated elements (“staves”) containing silicon strip detectors are under design and development. Each stave would hold of order 30 individual modules and contain integrated electrical services, mechanical support, and cooling. Prototype tests of such staves are reported here including studies of noise, interference, and a comparison of power distribution by parallel and serial current flow. Mechanical designs and simulations of full length staves are presented as well.

Presenter: Carl Haber  
Oral presentation.