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# Cherenkov Diffraction Radiation Studies at Diamond Light Source using a One Dimensional Beam Position Monitor

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The following paper will display the fundamental ChDR studies which have been undertaken using the BPM prototype, presenting the design of the BPM itself whilst focusing on the process of optimising the maximum signal for 500 nm narrowband ChDR. Data acquisition for the examination of ChDR signal decay has stemmed from impact parameter scans where a particular assembly or beam parameter is altered, and the beam is moved transversely away from the prism. Exploration into the effect of altering ChDR parameters is considered alongside how the signal is impacted by prism rotation and examination of at which angle the detected ChDR signal is at a maximum. The vertical position at which the coupling between the emitted ChDR light and the fibre optic system is optimal has been determined, resulting in a maximum signal.

The broadband impact parameter and vertical measurements have been compared with their narrowband counterparts and presented.

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