

ATTENDEES

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PRESENTATION

*HEBT Momentum Scraper, H<sup>+</sup> Ray Trace Simulation*  
- P. He

A major requirement of SNS is to have low uncontrolled beam losses so that radiation levels will be low enough to permit hands-on maintenance of system components. To meet this requirement, a number of beam scrapers and collimators are used to control halo formation, both prior to injection and in the accumulator ring. One of these is the momentum scraper located at the maximum dispersion point of the 90° achromatic bend in the High Energy Beam Transport (HEBT). This scraper consists of a foil that strips the H<sup>+</sup> beam to H<sup>0</sup>, which is directed to a beam dump by the next bending magnet. In order to reduce the radiation in the beam dump station region, H<sup>+</sup> particle tracking was performed to determine the outer boundaries and the angle of the Y-type vacuum chamber that will contain the beam. Two computer codes were used, RAYTRACE from MIT and OPERA-2D from VectorFields Inc. The analysis concluded that no changes are necessary to the original design in order to meet the beam loss requirements with beam energy between 840MeV and 1.3GeV.