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1P37 - Diode Design For Increased Radiation Dose in HERMES III Far-Field

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DIODE DESIGN FOR INCREASED RADIATION DOSE IN HERMES III FAR-FIELD

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Increasing radiated dose in the HERMES III far-field region is both a matter of mitigating current loss in the MITL and electron incident angle on the Bremsstrahlung converter. The self-magnetic field of the high currents in the diode causes the electrons to pinch at steep angles once the radial electric field drops to zero near the converter. Since a lower incident angle (closer to norm) increases the dose nonlinearly, diode design should minimize this pinch angle. Designs include extended and indented anode configurations. Indented anode designs are compared with results shared by T. Renk and P. F. Ottinger (using LSP) as well as older results from Sanford (using MAGIC). All designs are reported along with their associated simulation results.

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