

Thermal Aspects of Beam Intersecting Diagnostic Devices, P. STREHL, Gesellschaft Für

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For a wide range of ion species with an expected beam pulse power of up to some Megawatts after the intensity upgrade of the Unilac thermal aspects in the design of destructive beam diagnostic devices as well as tolerable beam losses along the machines are considered. The dependencies of thermal heating on the thermal characteristics of the stopping material, on the penetration depth of the particles and on the beam spot size are discussed considering various beam pulse lengths and duty factors, too. The results of relevant calculations based on practical estimations as well as on solutions of the related partial differential equations of heat transfer are given for some typical projectile-target combinations.