

**Calculation of the Luminosity Spectrum and the Differential Luminosity,** H. HEYDARI,

H. SCHULTE, TU BERLIN - The paper presents a computer code for solving the Luminosity Spectrum and the Differential Luminosity. Instead of using the particles-in-cells method, the code is based on analytical solutions and formulae. The user creates an input data file, which contains only a few numbers of parameters, such as the beam size, the number of particles and the centre-of-mass energy. The beam, with a round or elliptical cross-section, is described by a uniform or a Gaussian density function in transverse and longitudinal direction. In all cases the program makes use of the analytical solutions for the energy loss, the deflection angle, the Luminosity Spectrum and the Differential Luminosity. The results for several Linear Collider designs and different disruption numbers are obtained and compared with other numerical solutions. The numerical examples demonstrate clearly the accuracy of this method.