GALAXY ADVANCED ENGINEERING, INC.
P.O. BOX 614
BURLINGAME, CALIFORNIA 94011
Tel: (650) 740-3244
Fax: (650) 347-4234
E-mail: bahmanz@aol.com

SANDYL/PC

A Monte Carlo Three - Dimensional Code for Calculating Combined Photo-Electron Transportation Complex System for PC Computer

SANDYL/PC is a code for computing photon-electron transport and deposition in complex systems by the Monte Carlo method. In this computation, a large number of possible particle trajectories are generated one at a time and, as the particle proceeds through the material of the system, contributions to the quantities making up the desired information are tallied. After a number of trajectories, the averages of these quantities are statistical approximations to the solution. All histories of source and secondary particles with energies in the 1-keV to 1000-MeV range are followed through the system. The code does time- and space- dependent transport calculations of the photon-electron cascade in complex systems. The theory and operational features of the three-dimensional Monte Carlo code in **SANDYL/PC** are described.

For a photon history, following the photon from scattering to scattering using the various probability distributions to find distances between collisions, type of collisions, type of secondary, and their energies and scattering angles generates the trajectory.

The condensed-history Monte Carlo method is used for the electron transport. In a history, the spatial steps taken by an electron are pre-computed and may include the effects of a number of collisions. The corresponding scattering angle and energy loss in the step are found from the multiple scattering distributions for these quantities.

We at **Galaxy Advanced Engineering (GAE), Inc.** have taken the steps to produced the PC version, (i.e. **SANDYL/PC**). Currently the program is operating on IBM /PC AT or 100% compatibles under PC/DOS or MS/DOS operating system. The code also can run under Windows 95/98/2000/XP/ME and NT as well. To obtain this code please contact our company or call us on 650-740-3244.