Preliminary Design of the Vacuum System for DIAMOND, J.D. HERBERT, R.J. REID, T.M. WESTON, CLRC Daresbury Laboratory, WARRINGTON WA4 4AD, UK - The design of vacuum systems for modern third generation synchrotron light sources is by no means straight forward, especially to achieve the necessary low pressures throughout the small aperture magnet vessels. A number of computational methods, including Monte-Carlo simulations, have been developed recently to aid the designers of such systems. Experience has demonstrated that some degree of confidence can be placed upon the results obtained from them, providing they are used with care. We are embarking upon the detailed design study of a light source known as DIAMOND, that will meet user requirements well into the next century. To assist in the design of the vacuum system, we have used a Monte-Carlo simulation program[1] to calculate pressure profiles around the storage ring. Here we describe the use of the program as part of an iterative process leading to a satisfactory vacuum system design for DIAMOND.

1 *Molflow*, R. Kersevan, Wilson Accelerator Laboratory, Cornell University, Ithaca, N.Y.