Remarks on Some Basic Issues in Quantum Mechanics*

Berthold-Georg Englert

Max-Planck-Institut für Quantenoptik, Hans-Kopfermann-Straße 1, D-85478 Garching,
Atominstitut der Österreichischen Universitäten, Stadionallee 2, A-1020 Wien, Austria,
Department of Physics, Texas A&M University, College Station, TX 77843-4242, USA

   Two-way interferometers with which-way detectors are not only of importance in physical
research, they are also a useful teaching device. A number of basic issues can be illustrated
and discussed, even at the level of undergraduate teaching. Among these issues are: the physical
meaning of a state vector; entangled systems; Einstein-Podolsky-Rosen correlations; statistical
operators and the as-if realities associated with them; quantum erasure; Schrödinger's cat; and,
finally, wave-particle duality.

Reprint requests to Dr. B.-G. Englert, Garching. Fax: +49 89 329 05 200, e-mail: bge@mpq.mpg.de