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**Alejandro Uribe\*** ([uribe@umich.edu](mailto:uribe@umich.edu)), Department of Mathematics, University of Michigan, 530 Church Street, Ann Arbor, MI 48109-1043. *Some mathematical manifestations of the quantum-classical relationship.*

A guiding principle during the early development of quantum mechanics was that, if in the quantum formalism one allowed the quantum (as measured by Planck's constant)  $h$  to tend to zero, one would recover classical mechanics. Mathematically, this necessitates an asymptotic relationship between the wave functions and the Schrödinger equation, on the one hand, and limiting Hamiltonian systems, on the other. I will report on some recent manifestations of this relationship, in diverse problems related to numerical analysis and symplectic geometry. (Received August 01, 2005)