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Making Quantum Mechanics Visual and Interactive with Physlet- and OSP-Based Curricular Material

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We have produced and class-tested interactive Physlet- and Open Source Physics-based curricular material in support of introductory, intermediate, and advanced courses in quantum mechanics. These exercises address both quantitative and conceptual difficulties encountered by many students in such topics as wave function shape, momentum space, time evolution, and classical/quantum-mechanical correlations. Because the materials are Web based and extremely flexible, these exercises are appropriate for use with a variety of levels and pedagogies. Examples of the curricular materials, the results of our preliminary assessment of their effectiveness, and future directions of this project will be discussed. Part of this work was supported by a Research Corporation Cottrell College Science Award (CC5470). Physlets and Open Source Physics are generously supported by the National Science Foundation (DUE-0126439 and DUE-0442581).