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Tips and Tools for Teaching Quantum Mechanics GUANGTIAN ZHU, CHANDRALEKHA SINGH, Department of Physics & Astronomy, University of Pittsburgh — Learning quantum mechanics is challenging – students usually struggle to master the basic concepts, even though they may perform well on solving quantitative problems. Our group is investigating the difficulties that upper-level students have in learning quantum mechanics. To help improve student understanding of quantum concepts, we are designing quantum interactive learning tutorials (QuILTs) and tools for peer-instruction. Many of the tutorials employ computer simulations to help students visualize and develop better intuition about quantum phenomena. We will discuss the common students' difficulties, share the material we have developed and evaluated to make the quantum mechanics class engaging and useful, and show ways to bridge the gap between quantitative and conceptual aspects of quantum mechanics.

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