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**Improving student understanding of quantum mechanics<sup>1</sup>**

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Learning quantum mechanics is challenging for many students. We are investigating the difficulties that upper-level students have in learning quantum mechanics. To help improve student understanding of quantum concepts, we are developing quantum interactive learning tutorials (QuILTs) and tools for peer-instruction. Many of the QuILTs employ computer simulations to help students visualize and develop better intuition about quantum phenomena. We will discuss the common students' difficulties and research-based tools we are developing to bridge the gap between quantitative and conceptual aspects of quantum mechanics and help students develop a solid grasp of quantum concepts.

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