Improving students’ understanding of quantum mechanics\textsuperscript{1}

CHANDRALEKHA SINGH, GUANGTIAN ZHU, University of Pittsburgh —
Learning quantum mechanics is challenging. 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. Supported by the National Science Foundation.

\textsuperscript{1}Supported by NSF PHY-0653129 and 055434.