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Student Reasoning About Experimental Measurement Uncertainty Across Physics Contexts[1] EMILY M. STUMP, Cornell University, COURTNEY L. WHITE, GINA PASSANTE, California State University Fullerton, N. G. HOLMES, Cornell University — Measurement uncertainty is an important concept taught in undergraduate physics curricula, both in theoretical and laboratory courses. Although student ideas about error and uncertainty have been extensively studied in introductory classical mechanics lab experiments, there is relatively limited research on student thinking about experimental measurement uncertainty in more advanced physics contexts, such as quantum mechanics. In this work, we used open-response surveys to study advanced physics students' interpretations of fictitious data distributions from several common laboratory experiments in both classical and quantum mechanics. We coded student responses based on what sources of uncertainty they identified and how they believed the data would change if more or better data were collected. In this talk, I will discuss how student reasoning about measurement uncertainty varies across physics contexts.

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