Abstract Submitted
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Validation Studies of a Physics Problem Solving Survey WENDY ADAMS, CARL WIEMAN, University of Colorado — Researchers have created several tools for evaluating conceptual understanding as well as students' attitudes and beliefs about physics; however, the field of problem solving is sorely lacking a broad use evaluation tool. This missing tool is an indication of the complexity of the field. The most obvious and largest hurdle to evaluating physics problem solving skills is the physics content knowledge necessary to solve problems. We are tackling this problem by looking for the physics problem solving skills that are useful in other disciplines as well as physics. We will report two sets of interviews that compare physics problem solving skills to the results of a problem solving survey developed at Colorado. The first set of students participated in a series of interviews on solving complex introductory mechanics problems and a second set of students were involved in a semester long series of interviews where they solved quantum mechanics problems. Students were characterized on their skills in either set of interviews and these results were then compared to independent evaluation of their skills using the problem solving survey.

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