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Assessing student reasoning in upper-division electricity and magnetism at Oregon State University JUSTYNA ZWOLAK, Florida International University, CORINNE MANOGUE, Oregon State University — Standardized assessment tests that allow researchers to compare the performance of students under various curricula are highly desirable. There are several research-based conceptual tests that serve as instruments to assess and identify students difficulties in lower-division courses. At the upper-division level, however, assessing students difficulties is a more challenging task. Although several research groups are currently working on such tests, their reliability and validity are still under investigation. We analyze the results of the Colorado Upper-Division Electrostatics diagnostic from Oregon State University and compare it with data from University of Colorado. In particular, we show potential shortcomings in the Oregon State University curriculum regarding separation of variables and boundary conditions. Our work complements and extends the previous findings from the University of Colorado by highlighting important differences in student learning that may be related to the curriculum, illuminating difficulties with the rubric for certain problems and verifying decay in post-test results over time.

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