

Abstract Submitted
for the APR08 Meeting of
The American Physical Society

Investigating the Conceptual Variation of Major Physics Textbooks¹ JOHN STEWART, RICHARD CAMPBELL, University of Arkansas, JESSICA CLANTON, Arkansas Tech - Mountain Home — The conceptual problem content of the electricity and magnetism chapters of seven major physics textbooks was investigated. The textbooks presented a total of 1600 conceptual electricity and magnetism problems. The solution to each problem was decomposed into its fundamental reasoning steps. These fundamental steps are, then, used to quantify the distribution of conceptual content among the set of topics common to the texts. The variation of the distribution of conceptual coverage within each text is studied. The variation between the major groupings of the textbooks (conceptual, algebra-based, and calculus-based) is also studied. A measure of the conceptual complexity of the problems in each text is presented.

¹This research supported in part by NSF Grant DUE-0535928.

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Date submitted: 11 Jan 2008

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