

Title: ConcepTests supporting the teaching of mechanics using the Peer Instruction method

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Abstract:

This diploma thesis focuses on the development of conceptual questions in mechanics (including their testing), which are typical for the method of Peer Instruction. The research part of the thesis follows the historical background of this method and provides an overview of its most important elements including the possibility of connection to other teaching methods. In addition, it presents various collections of conceptual questions in both czech and foreign languages.

The research and development part of the thesis is devoted to the preparation of conceptual questions in mechanics which are based on selected misconceptions. These problems were subsequently tested on approximately 130 high school students and the results were statistically processed. In the statistical processing of tasks, we were focused on their difficulty, discrimination and distractor analysis.

Keywords: concepttests, Peer Instruction, mechanics, physics teaching