

Title: Problems from mechanics for electronic collection of solved problems

Author: Jakub Šenar

Department: Department of Physics Education

Supervisor: RNDr. Dana Mandíková, CSc., Department of Physics Education

Abstract: The assignment of the bachelor work was to create tasks from mechanics for an electronic collection of solved problems. The thematic field is deformation of continuum and elasticity from the point of view of a secondary school and the academic introductory course for physics teachers. 16 structured tasks were created. Eleven of them are on undergraduate difficulty level, three on advanced upper secondary school level and two on upper secondary school level. Each of the tasks includes an assignment, an analysis, structured hints, detailed commented solution and an answer.

The work also includes a defining of the issues, an aim of the work and its structure. There is no absent of an overview of curriculum which is discussed in the given topic at a secondary school and a university course for physics teachers at MFF UK, and a brief introduction of the electronic collection of solved problems. Theoretical introduction to deformation of continuum is also included. A conclusion will prove what was achieved in the work. A part of the work is also a supplement in the form of a CD with all created tasks.

Keywords: mechanics, deformation of continuum and elasticity, tasks, electronic collection of solved problems