

T6_74 REAL INTERACTIVE PENDULUM EXPERIMENT WITH DATA COLLECTION AND TRANSFER ACROSS INTERNET

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The teaching of Mechanics, using Integrated e-Learning (INTe-L) [1], is strongly based on hands on or Internet remote experiments. Unfortunately, those experiments in general are scarce [1] for their complexity of implementation and constant need for repair. Within a set of remote interactive Mechanics experiments across the Internet [2], we devised and built several Mechanics experiments, controlled by the web services (as web browser), using measuring hardware and software measuring Intelligent School Experimental System (ISES) with sensing units for data collection, recording and evaluation and the software ISES WEB CONTROL kit for the establishing the server-client connection. The mathematical pendulum was constructed with a unique reconstruction of its instantaneous angle of deflection using two force sensing elements and on line exploited algorithm (ISES supported) for the angle of deflection display. The exploitation of the pendulum in kinematics, dynamics and work – energy relations is shown, based on the INTe-L principle. References [1] Schauer, F. - Ozvoldova M.- Lustig F.: Integrated e-Learning – New Strategy of Cognition of Real World in Teaching Physics, in Innovations 2006 (USA), World Innovations in Engineering Education and Research iNEER Special Volume 2009, to be published. [2] Schauer, F. - Ozvoldova, M. - Cernansky, P. - Kozik, T. - Valkova, L. - Slaninka, A. - Zovinová, M. - Majercik, P. - Tkac, L.: Slovak e-Laboratory of remote interactive experiments for university teaching by integrated e-learning strategy In: ICETA 2008: 6th International Conference on Emerging eLearning Technologies and Applications: September 11-13, 2008, Stará Lesná, The High Tatras, Slovakia. p. 467-472