**THE modelling OF PIPELINE STRESS during WATER HAMMER PHENOMENON**

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***Abstract:*** This study is focused on the Water Hammer phenomenon using the equipments at University “Dunarea de Jos” Galati laboratory. The paper analyses the pipeline stress distribution during pulse pressure induced by the suddenly closing of an electro-valve at the end of the pipeline. The effects of Water Hammer in this application are high shock stresses in pipeline. The analysis is made by finite element method, using program CAESAR II. The analysis consists in the model generation, defining the load cases according to the records made on the experimental equipments, followed by the post-processing of stress distribution. Because the highest total axial stress values exceed the allowable ones, the system is protected by a device, Water Hammer Arrester, which damps the peaks pressure and reduces stresses. This study has been accomplished for the Romanian National Research Council (ANCS), Grant 790/2008.

***Key words:*** CAD/CAEFEM Models, Water Hammer, Pipeline System, Stress Analysis.