Abstract:

The transient flows in closed conduct resulting from the variations of initial steady state, lead often to fatal consequences for the good functioning of hydraulic systems, and it produces implosions or explosions of the pipes or even loss of life, hence the need for a detailed analysis of these phenomena.

In order to reduce these effects, the aim of our work is to make a comparative study between the differentnumerical methods for solving the equations governing transient phenomenon. This comparison will be able to indicate the method which gives more effective results (flow and pressure) which approach the physical reality of problem with a minimal percentage of errors (optimal modeling of water hammer), which will allow to identify the most places exposed to dangerous, i.e. where the pressures transient exceed the prescribed limits, so, to envisage the adequate and necessary devices of protection.

Key words:

Transient flows, comparative study,numerical methods,error analysis.