

Pressure Drop In The Water Hammer Phenomenon In A Branched Network

Boualem SALAH, Ahmed KETTAB

Abstract:

Water hammer in pipelines is partially mitigated by the pressure drop produced by the flow within it. The relation that gives these energy losses is that of DARCY Weisbach in permanent regime, taking into account the variation of the speed along the pipeline, in each passage of a wavefront. In our study, we focus on the emerging wavefronts at the change points of diameters, or branching nodes, and the influence of this resulting loss on water hammer. The purpose of this study is to know, in an approximate way, the pressure drop caused during a transitional regime, given the badly known speed variation along the line, in order to size the pipeline.