

**Abstract:**

The bibliographic view shows that the water-hammer bred in a charged with gravitary flow or in repression was always studied, supposing this latter is free (not burried).The external pressure done by the ground on the pipe. Wasnt considered, by hypothesis, and consequently the pipe can be freely deformed in a radial way. In this case, the water-hammer value is far to be real since the pipes are burried. This considered hypothesis certainly modifies the calculation of the water- hammer reservoir air volume. In order to show the ground's effect on this latter, the case of the pipes in repression was toben into consideration in this work pipes in steel and P.V.C. free and burried. A comparison on the volumes, thus determined, will be presented between free and burried case for the two types of pipes.

**Key words:** transitory flow; wave celerity; water-hammer; pipes.