Both values taken from data at the end of Kokal

is the radial velocity fluctuation

Where f is a function of the roughness (ε) of the pipe and everything inside the parenthesis is the Reynolds Number.

Assumption

Then solve for :

is the average area of the pipe

Then solve for :

Solve for using :

Then solve for :

Then void fraction can be solved:

Assuming is the superficial gas velocity in the data at the end of the thesis and