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## Two phase flow in hydraulic machinery

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The aim of this talk is presentation and partial analysis of a mathematical model of two-phase fluid flow in a tube with special hydraulic elements like generator, valve, capacity, etc. The model in full generality is quite complicated for complete mathematical analysis.

Here, we will concentrate to possible special solutions which partially characterize different features which can dominate the flow. Thanks to special eisatz, the solutions can be found either in a closed form or with the help of solutions to ordinary differential equations.

It appears that even such special solutions can serve in engineering practice for planning experiments so that the results of measurements can be compared with the theoretical formulas derived mathematically.

### References

- [1] Straškraba, I., Vitásek, E.: The flow of a liquid with cavitation, J. of Concrete and Applicable Mathematics, Vol. 8, No. 4, (2010), 668-681.