

**Construction of all possible similarity solutions invariant under under
1- and 2-parameter symmetry groups of the
modified Khokhlov–Zabolotskaya equation** $u_{yy} = u_{tx} + \frac{1}{2}u(u_x)^2 + uu_{xx}$

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Abstract:

With the use of an adjoint representation of Lie algebra a classification of 1- and 2- dimensional subalgebras of mKZ Lie algebra may be obtained. The concept of an optimal system of subalgebras will be presented together with its consequences to the problem of finding similarity solutions. Construction of the optimal system of 1-dimensional subalgebras of the mKZ Lie algebra will be performed as an illustrative example.