Contribution Title: ON SOME CLASSES OF THE PARTIAL DIFFEREN-
                             TIAL EQUATIONS WITH NON-TRIVIAL SYMMETRY
                             GROUPS
Authors: V. M. Fedorchuk, V. I. Fedorchuk
Presenting author: Fedorchuk V. M.
Affilation: Pedagogical University, Institute of Mathematics, Krakow;
                             Pidstryhach Institute of Applied Problems of Mechanics
                             and Mathematics, National Ukrainian Academy of Sciences
E-mail: vasfed@gmail.com
Invited speaker:
YRS seminar: NO

In many cases the mathematical models of various processes can be described by means of partial differential equations (PDEs) in the spaces of different dimensions and different types. It is well known that many of the PDEs, which are useful in theoretical and mathematical physics, have non-trivial symmetry groups (see, for example, [1,2,3]).

The knowledge of the subgroup structure of the local Lie groups of the point transformations allow us to construct and investigate PDEs with non-trivial symmetry groups (see, for example, [1,2,3,4,5]).

Some new results obtained while applying of the subgroup structure of the local Lie groups of the point transformations to construct and investigate the PDEs with non-trivial symmetry groups will be presented.

[1] W. Miller, Jr., *Symmetry and Separation of Variables* (Addison-Wesley, Readnig, Mass., 1977).

[2] P.J. Olver, *Applications of Lie Groups to Differential Equations* (Springer-Verlag, New York, 1986).

[3] W.I. Fushchych and A. G. Nikitin, *Symmetries of Equations of Quantum Mechanics* (Allerton Press Inc., New York, 1994).

[4] S. Lie, G. Scheffers, *Vorlesungen über Differentialgleichungen mit bekannten infinitesimalen Transformationen* (Leipzig, 1891).

[5] L. V. Ovsiannikov, *Group Analysis of Differential Equations* (Academic Press, New York, 1982).