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Abstracts of Short Communications and Posters

Section:

8. Analysis

1991 MS Classification: 45, 26, 33
Luchko, Yuri and Gorenflo, Rudolf, Free University of Berlin, Germany
Lie group analysis of a partial differential equation of fractional order
Partial differential equations of fractional order (FPDE) are obtained by replacing some (or all) derivatives in partial differential equations by derivatives of fractional order (in Caputo, Riemann-Liouville or inverse Riesz potential sense). The methods of the Lie group analysis can be used to determine special types of solutions, invariant under some symmetry group of the given FPDE. In the one-dimensional case the scale-invariant solutions can be found for some FPDEs in terms of the generalized Wright function by solving corresponding ordinary differential equations of fractional order with the Erdelyi-Kober derivatives.
Reference: Yu. Luchko and R. Gorenflo, Scale-invariant solutions of a partial differential equation of fractional order, *FCAA* **1**(1998), 63-79.