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Nicoleta Virginia Bila* (nbila@uncfsu.edu), Fayetteville State University, Dept of Mathematics and Computer Science, 1200 Murchison Road, Fayetteville, NC 28301. *GENDEFGET - a MAPLE subroutine based on a new method for finding equivalence transformations.*

A new efficient method for finding the generalized equivalence transformations related to a differential equation system via its extended classical symmetries is presented. This technique applies to the case when the arbitrary functions involve only the independent variables of the system. Intriguingly, for this type of equations, any symbolic manipulation program designed to find classical Lie symmetries can also be used to determine generalized equivalence transformations, without any modification of the program. The method has been implemented as the MAPLE routine GENDEFGET and is based on the MAPLE package DESOLV (authors Carminati and Vu). The nonlinear stationary heat conduction equation is considered as an example. (Received August 02, 2011)