1125-34-1354 **Pavel Winternitz*** (wintern@crm.umontreal.ca), Centre de recherches mathématiques, Université de Montréal, Montreal, QC H3C 3J7, Canada. *Lie group classification of delay ordinary differential equations.*

A Lie group classification is given of first-order delay ordinary differential systems of the form

$$\dot{y} = f(x, y, y_-), \qquad x_- = g(x, y, y_-),$$

where $f$ and $g$ are arbitrary smooth functions and $y_- = y(x_-)$ is the value of $y$ a at the "delay point" $x_-$. If $f$ is linear in $y$ and $y_-$ and $g$ depends on $x$ alone, the Lie symmetry algebra is infinite-dimensional, otherwise it can have dimensions $0 \leq n \leq 3$. The aim of the program is to extend the applicability of Lie group methods from differential and difference equations to delay differential ones. This is joint work with V. Dorodnitsyn and R. Kozlov. (Received September 16, 2016)