

Title: Second order scalar autonomous ODE's.

Abstract: Consider an equation of the form  $u' = v$ ,  $v' = F(u,v)$ , where  $F$  is an infinitely differentiable function of the two real variables  $(u,v)$ . The main theorem to be presented is: if  $F(u,-v) = -F(u,v)$ , then, under mild additional conditions, there exists a infinitely differentiable change of variables onto  $\mathbb{R}^2$ , from  $(u,v)$  to  $(x,y)$ , such that the new variables the equation becomes  $x' = y$ ,  $y' = g(x)$ .