

OSCILLATION THEORY OF HALF-LINEAR SECOND ORDER DIFFERENTIAL EQUATIONS

Ondřej Došlý, Brno, Czech Republic

In the last years, considerable effort has been made to show that oscillation properties of the half-linear second order differential equation

$$(*) \quad (r(t)\Phi(x'))' + c(t)\Phi(x) = 0, \quad \Phi(x) := |x|^{p-2}x, \quad p > 1$$

are similar to those of the Sturm-Liouville second order equation

$$(r(t)x')' + c(t)x = 0$$

which corresponds to the special case $p = 2$ in (*). We will present some results of this investigation. In particular, we will show what phenomena are quite identical for both equations, and, on the other hand, we will point out problems where the extension of “linear” results is impossible or not known yet.