

# Non-negative periodic solutions to second-order differential equations with sublinear nonlinearities

Jiří Šremr

*Brno, Czech Republic*

e-mail: sremr@ipm.cz

We will present efficient conditions for the existence and uniqueness of a non-trivial non-negative  $\omega$ -periodic solution to the equation

$$u'' = p(t)u + q(t, u) \tag{1}$$

with a sublinear nonlinearity  $q$ . A particular case of (1) will be discussed in detail, namely,

$$u'' = p(t)u + h(t)|u|^\lambda \operatorname{sgn} u, \tag{2}$$

where  $\lambda \in ]0, 1[$ . The results obtained will be compared with the facts which can be derived for equation (2) in the autonomous case, i. e., if the coefficients  $p$  and  $h$  are constants.