

# On positive periodic solutions to second-order ODEs with a power non-linearity

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We will present an overview of results concerning the existence of a **positive** solution to the periodic problem

$$u'' = p(t)u + h(t)|u|^\lambda \operatorname{sgn} u; \quad u(0) = u(\omega), \quad u'(0) = u'(\omega),$$

where  $p, h \in L([0, \omega])$  and  $\lambda \geq 0$ .

To prove our results, we essentially use properties of a corresponding linear problem which allows us to apply the method of lower and upper functions in the non-linear case.