INTERVAL OSCILLATION CRITERIA FOR SECOND ORDER DAMPED HALF–LINEAR DIFFERENTIAL EQUATIONS WITH FORCING TERM

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Abstract. By using an inequality due to Hardy, Littlewood and Polya and averaging functions, several interval oscillation criteria are established for the second-order damped half-linear differential equation with forcing term of the form

$$\left( r(t)|y'(t)|^{\alpha-1}y'(t) \right)' + p(t)|y'(t)|^{\alpha-1}y'(t) + q(t)|y(t)|^{\alpha-1}y(t) = e(t)$$

that are different from most known ones in the sense that they are based on the information only on a sequence of subintervals of \([t_0, \infty)\), rather than on the whole half-line, where \(\alpha > 0\). In particular, several examples that dwell upon the importance of our results are also included.


Keywords and phrases: Interval criteria, oscillation, superlinear differential equations, damping, forced term.

REFERENCES
