

Oscillation criterion for combined conditionally oscillatory linear differential equations

By PETR HASIL (Brno) and MICHAL VESELÝ (Brno)

Abstract. We analyze second-order linear differential equations whose coefficients contain a power of the independent variable and a general power of the natural logarithm of the independent variable together with periodic (or more general) functions. Such equations are a combination of known types of conditionally oscillatory linear equations. Applying the Riccati transformation and a new modification of the adapted Prüfer angle, we prove an oscillation criterion for the studied equations which is new for several simple linear equations. The novelty is illustrated in examples of such equations.

PETR HASIL &
MICHAL VESELÝ
DEPARTMENT OF MATHEMATICS
AND STATISTICS
FACULTY OF SCIENCE
MASARYK UNIVERSITY
KOTLÁŘSKÁ 2
CZ 611 37 BRNO
CZECH REPUBLIC

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