

# Oscillation and nonoscillation for Emden-Fowler equations: continuous versus discrete

ZUZANA DOŠLÁ

*Masaryk University  
CZ-60200 Brno, Czech Republic  
dosla@math.muni.cz*

MAURO MARINI

*University of Florence  
IT-50139 Florence, Italy  
mauro.marini@unifi.it*

In this talk we present some recent results on the asymptotic behavior of solutions for the differential equation

$$(a(t)|x'(t)|^\alpha \operatorname{sgn} x'(t))' + b(t)|x(t)|^\beta \operatorname{sgn} x(t) = 0. \quad (*)$$

and the corresponding difference equation

$$\Delta(a_n|\Delta x_n|^\alpha \operatorname{sgn} \Delta x_n) + b_n|x_{n+1}|^\beta \operatorname{sgn} x_{n+1} = 0, \quad (+)$$

where  $a, b \in C(\mathbb{R}_+, \mathbb{R}_+)$ ,  $\{a_n\}, \{b_n\}$  are positive real sequences for  $n \geq 1$  and  $\alpha, \beta$  are positive constants.

We show some interesting analogies and discrepancies between the continuous and the discrete case.

This is a joint work with Mariella Cecchi from University of Florence, Italy.

## References and Literature for Further Reading

- [1] M. Cecchi, Z. Došlá, M. Marini, Monotone solutions of two-dimensional nonlinear functional differential systems. To appear.
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- [3] J. D. Mirzov, Asymptotic Properties of Solutions of the Systems of Nonlinear Nonautonomous Ordinary Differential Equations, Maikop, Adygeja Publ. 1993. English translation: Folia, Mathematics **14**, Masaryk University Brno 2004.