

International Workshop on Dynamical Systems and Applications (IWDSA 2019)

*In Memory of Prof. Dr. Aydın Tiryaki*

Gazi University, Ankara, Turkey, 3-4 May 2019

## Oscillation results for a certain type elliptic equation by using a suitable Picone-type inequality

S. Sahiner

*Izmir Bahcesehir College, Izmir, Turkey, uremensinem@gmail.com*

### Abstract

Picone-type inequalities are very useful tools to establish oscillation theorems for partial differential equations. In this talk, we establish a Picone-type inequality for a certain type nonlinear elliptic equation in order to give an oscillation result. Moreover we derive some oscillation results by reducing the half linear partial differential equations to half linear ordinary differential equations.

**Key Words:** Picone's inequality, Elliptic equations, Oscillation criteria.

### References

- [1] J. Jaroš, T. Kusano, N. Yoshida, Picone-type inequalities for half linear elliptic equations and their applications, *Adv. Math. Sci. Appl.*, 12 (2002), 709-724.
- [2] J. Jaroš, T. Kusano, N. Yoshida, Picone-type inequalities for elliptic equations with first order terms and their applications, *J. Inequal. Appl.*, 2006 (2006), 1-17.
- [3] N. Yoshida, Oscillation criteria for half-linear partial differential equations via Picone's Identity, in: *Proceedings of Equadiff*, 11 (2005), 589-598.
- [4] N. Yoshida, *Oscillation Theory of Partial Differential Equations*, World Scientific Publishing Co. Pte. Ltd., 2008.
- [5] A. Tiryaki, S. Sahiner, Sturm comparison theorems via Picone-type inequalities for some nonlinear elliptic type equations with damped terms, *Electronic Journal of Qualitative Theory of Differential Equations*, 1 (2014), 1-12.