* Electronic Address: `sebrus@mat.umk.pl`
^{1} Nicolaus Copernicus University, Torun, Poland

Ważewski type theorem for non-autonomous systems of equations

Sebastian Ruszkowski[1][*]

I will present Ważewski type theorem for non-autonomous systems of equations with a disconnected set of egress points. During the talk I will study solutions of nonlinear dynamic systems on time scales of the form $y^\Delta(t) = f(t, y(t))$, where $f \colon \mathbb{T} \times \mathbb{R}^n \to \mathbb{R}^n$, and $\mathbb{T}$ is the time scale. For a given set $\Omega \subset \mathbb{T} \times \mathbb{R}^n$, I will formulate conditions for functions f which guarantee that at least one solution y of the above system stays in Ω. It is worth noting that the results are new also for non-autonomous systems of difference equations $\Delta y(n) = f(n, y(n))$ and impulsive differential equations. The talk is based on paper [1].

References

[1] G. Gabor, S. Ruszkowski, J. Vitovec, *Ważewski type theorem for non-autonomous systems of equations with a disconnected set of egress points*, Appl. Math. Comput., Vol. 265 (2015), 358–369