A note on existence and stability of periodic and almost periodic solutions of quasilinear equations with "maxima"

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Let us consider differential equation with "maxima"

$$y'(t) = -\delta y(t) + p \max_{s\in[t-h,t]} y(x) + f(t) \tag{1}$$

with initial conditions

$$y(t) = \varphi(t), t \in [-h, 0],$$

where $f(t) \in C(R^n), f(t+T) = f(t)$, $y(t)$ and $\varphi(t)$ are continuous functions with values in R^n, p and δ are some positive constants.

We investigate problems relation to existence and stability of periodic and almost periodic solutions of Eq.(1). Note, that analogocal problems for some other types of differential equations with "maxima" were studied in [1-3].

The sufficient conditions for existence, uniqueness and stability of periodic (almost periodic) solutions of Eq.(1) were obtained.

References:

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