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***Title*:** Remarks on planar systems with monotone time-mappings, and their periodic perturbations

***Abstract*:** We present some examples of nonlinear equations with periodic coefficients, which can be viewed as a periodic perturbation of a center in the phase-plane. The existence and multiplicity of periodic solutions is obtained using different topological approaches. For some of these results, a crucial assumption is the so-called "twist condition", which, in turns, is often satisfied when the period map of the associated autonomous system is monotone.
The study of autonomous systems with centers possessing a monotone period map is a research topic of independent interest in the area of planar dynamical systems. With this respect, we will also survey some classical and more recent results in this direction and will show some applications to the periodically perturbed systems.