systems seem to be useful for the known methods of secure or wide-band communication [A.S. Dmitriev, A.I. Panas. Dynamical chaos: new curriers of information for the communication systems. M.:Fizmatlit, 2002] based on the mixing of information signal with chaotic signal and detection of the information due to synchronization of transmitter and receiver, which are identical chaos generators. In present work it is shown, that in the case of robust chaotic transmitter and receiver the mechanism of information transition become more stable and the detection of information is possible even if transmitter and receiver are nonidentical.

The dynamics of coupled discrete maps with the conservative type of coupling at different dissipation values

A.P. Kuznetsov, A.V. Savin, D.V. Savin
Departament of Nonlinear Processes, Chernyshevsky Saratov State University, Saratov, Russia, e-mail: savin.dmitry.v@gmail.com

The dynamics of two coupled discrete maps is considered. The type of coupling is chosen in order not to introduce any additional dissipation in the system, so the dissipation level is determined only by the subsystem parameters. The decrease of dissipation leads to the complication of the parameter space structure and the picture of critical behaviour. Particularly, the line of transition to chaos via the Feigenbaum period-doubling cascade becomes divided into several fragments, the structure of the parameter space between them is rather interesting. Different mechanisms of this process are described.

Stability of periodic solutions of singular perturbed Stuart-Landau equation

A. Kashchenko
Yaroslavl State University, Yaroslavl, Russia, e-mail: sa-ahr@yandex.ru

It is considered singular perturbed Stuart-Landau equation

$$\varepsilon\dot{u} = (1+(-1+ic)|u|^2)u + \gamma e^{i\phi}(u(t-1)-u).$$

Here ε is small positive parameter ($0<\varepsilon\ll 1$). We study existence and stability of periodic solutions

$$u_{R,\Lambda} = R\exp(i\Lambda t)$$

of given equation. Here R,Λ are real constants and $R>0$. Let $L(c,\gamma,\varphi)$ be set of points (ω,ρ^2) those belong to ellipse

$$(\rho^2-1+\gamma\cos\varphi)^2+(\omega-c\rho^2+\gamma\sin\varphi)^2=\gamma^2$$

and to half plane $\rho^2>0$.