October 7, from 4:45 p.m. to 6:20 p.m. (Moscow time)
ONLY broadcast via ZOOM

Vladimir P. Golubyatnikov

On nonlocal oscillations in 3d models
of circular gene networks

We study three-dimensional piecewise linear dynamical systems of the kinetic type as models of interaction of components of a gene network where the regulatory feedback is described by monotonic multistep functions in generalized threshold models. The unknown functions in these dynamical systems describe concentrations of these components.

In order to control behavior of trajectories of these dynamical systems, we decompose their phase portraits to smaller blocks by planes parallel to the coordinates ones so that in each block the equations of these dynamical systems become linear with constant coefficients, and thus, can be solved explicitly, Using methods of qualitative theory of ordinary differential equations, we show that such dynamical systems can have two stable periodic trajectories (cycles).

SCIENTIFIC SEMINAR
"DIFFERENTIAL GEOMETRY AND APPLICATIONS"

headed by Academician of RAS Anatoly T. Fomenko

The zoom-ref is provided only to registered persons
To be registered, ask any participant of our seminar to endorse you
Announcements of previous talks can be found on the seminar website
`http://dfgm.math.msu.su/chairsem.php`