



RUDN  
university



**M**athematical  
**M**odelling in  
**B**ioMedicine

# MATHEMATICAL MODELLING IN BIOMEDICINE

Scientific program and  
key points of  
International Workshop  
December 16-18, 2020 (online)

Organized by:  
RUDN University, Russia,  
University of Lyon, France.

Organizing Committee:  
V. Volpert (Lyon), C. Leon, A. Mozokhina, A. Tokarev.

## Wednesday, December 16

14:55-15:00 *Workshop Opening*

### Plenary talk I \*

**15:00-16:00** *V. Volpert*, “Two years of the center ‘Mathematical modelling in biomedicine’: current works and perspectives”

### Student Workshop Session

16:00-16:15 *O. Udovenko*, “Neural field mathematical models”

16:15-16:30 *V. Kruglov*, “Neural networks for solution of hemodynamics equations”

16:30-16:45 *N. Rodin*, “Bistability and oscillatory dynamics in the kinetic model of a viral infection”

## Thursday, December 17

### Plenary talk II \*\*

**15:30-16:30** *Yu. Vassilevski*, “Mathematical modelling for real human anatomy”

### Workshop Session

16:30-16:50 *F. Syomin, A. Khabibullina, A. Tsaturyan*, “Impairment of the myocardial contractility and conductivity in the left ventricle wall: mathematical modelling”

16:50-17:10 *R. Savinkov, D. Grebennikov, G. Bocharov*, “Modelling and analysis of the human lymphatic system using graph theory”

17:10-17:30 *C. Leon*, “Mathematical model of emergence, competition and coexistence of virus strains in dependence of virus genotype”

## Friday, December 18

### Workshop Session

**15:00-15:20** *S. Budzinskii*, “Study of nonlinear dynamics of periodic waves in a neural field model”

15:20-15:40 *M. Kuznetsov*, “Optimization of dose fractionation for radiotherapy of a solid tumor with account of oxygen effect and proliferative heterogeneity”

15:40-16:00 *A. Mozokhina*, “The influence of lung inflammation on the pulmonary blood flow”

16:00-16:20 *V. Bezyaev, K. Riumina*, “Three models of early development of atherosclerosis and their comparative analysis”

16:20-16:40 *A. Tokarev*, “Uncovering internal regulations in Autowave systems such as Blood Coagulation: *ansatz* approach and analysis of the Gray-Scott model”

16:40 *Workshop Closing*

\* joint meeting with the student seminar of the interdisciplinary research center “Mathematical modelling in biomedicine” (S.M. Nikolskii Mathematical Institute, RUDN university)

\*\* joint meeting with the general seminar of the interdisciplinary research center “Mathematical modelling in biomedicine” (S.M. Nikolskii Mathematical Institute, RUDN university)

Dear speakers and attendees,

- Workshop is realized in the Microsoft Teams platform (account and application installation are not required).
- You can connect to the video conference 5 minutes before the start.
- Link to connect: [CLICK HERE!](#)
- Workshop languages: Russian, English.
- Having finished your session please send us the pdf with your presentation by mail to be posted on our website.

**We will be glad to see you!**

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