Ray tracing visualization based on ray optics

- Fedorov A. V., RUDN University, Russian Federation
- Gevorkyan M. N., RUDN University, Russian Federation
- Stepa C. A., RUDN University, Russian Federation
- Korolkova A. V., RUDN University, Russian Federation
- Demidova A. V., RUDN University, Russian Federation
- Kulyabov D. S., RUDN University, Russian Federation & JINR, Russian Federation
- Fedorov A. V.1 Gevorkyan M. N.1 Stepa C. A.1 Demidova A. V.1 Korolkova A. V.1 Kulyabov D. S.1,2
- 1 RUDN University, Russian Federation 2 JINR, Russian Federation
- Speaker: Arseny V. Fedorov
- RUDN University, Russian Federation
- 1042210107@rudn.ru

The issues of ray and geometric optics, their relationship and application in the modeling of optical systems are considered. To determine the propagation lines of light waves, the eikonal equation is used, which is widely used in various fields of physics. The work describes Luneburg and Maxwell lenses, created on the basis of inhomogeneous media, which have unique properties of focusing light rays. To simulate optical systems, the Julia programming language and the PyVista library for drawing 3D graphs are used. Methods for visualizing the obtained data in the form of 3D graphs using the PyVista library are described.