

## **Excitation of an absorbing medium under the influence of tandem light pulses of different frequencies**

Propagation of focused femtosecond light beams causes a lot of nonlinear effects in absorbing media. They are accompanied by a change in time, spectral and spatial structures. Such phenomena have an active area of theoretical and experimental research in our time. One such area is the study of the processes occurring in the interaction of two laser pulses in absorbing media. It is necessary to simulate the experiment for a qualitative description of the behavior of light in the medium. To describe the model propagation of ultrashort laser pulses in the medium is required to solve for the field amplitude of the nonlinear Schrödinger equation (NSE). The purpose of this paper is to simulate the processes occurring in the interaction of short wave and long wave radiation in argon. The program was written in C++ software to achieve this purpose. The first step is the realization of high-frequency pulse transmission. Low-frequency beam propagates in the medium after the first radiation. The result of the program is the data sets that contain a value of the field and electron density in the space of three coordinates:  $r$  - radius,  $t$  - time and  $z$  - longitudinal coordinate.