Institute of Applied Physics
Russian Academy of Sciences

SimLight Group

«SimLigth» Group (from Institute of Applied Physics RAS, Russia) proposes a new service for theoretical and experimental groups performing a research work in the area of extreme light fields. We offer the service of making numerical investigation with any level of difficulty and resource-intensity in the following fields:

  1D-3D Particle-In-Cell simulations

  1D-4D simulations of Time Dependent Schrodinger Equation

  3D Finite-Difference Time-Domain simulation for light propagation in nonlinear matter

Our group has more than five years experience of making highest-level simulations. During this time we developed unique numerical techniques, algorithms (parallel FFT, Frequency-Resolved-Absorption method) and parallel program codes for modern supercomputers (2D-3D PIC code, 2D-4D TDSE code, 3D FDTD code with nonlinearity). All codes have been actively used for producing theoretical results, which were published in prestigious scientific journals (J. Phys. B **39**, S445-S455 (2006); Journal of Modern Optics **55**, 16, 2685-2692 (2008); PRA **77**, 033424 (2008); PRL **102**, 115005 (2009); PRL **102**, 184801 (2009)).

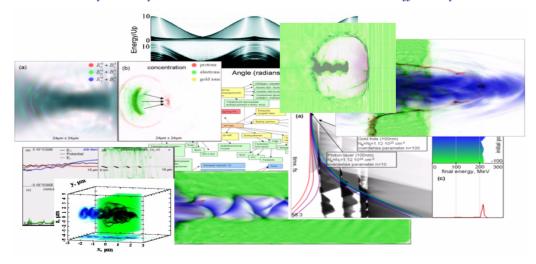We are ready to carry out the following works:

  Discuss and choose mathematical model and numerical algorithm

  Develop appropriate program code or modification of our code

  Test the code based on known cases, theories and effects

  Carry out numerical experiments

  Process results and present them in the form convenient for analysis, publication and presentation

We can run our program codes ether on your or our supercomputer facilities. The price of an order is worked out individually and can vary from few thousands Euros up to few tens thousands Euros.

Contact us:

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Let you and your theoreticians save time and research efficiently!

We do simulations, and you do science!