

2<sup>nd</sup> International Conference on

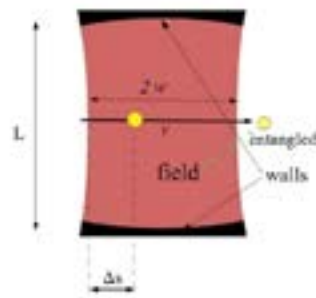
# QUANTUM PHYSICS AND QUANTUM TECHNOLOGY

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## Finite dimensional models of QED

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We consider quantum effects in the conductivity of atomic excitation energy through the chains of optical cavities with two-level atomic ensembles inside in the presence of dephasing noise. Computer simulation of the process was fulfilled by quantum master equation in the framework of Jaynes-Cummings and Tavis-Cummings-Hubbard models with RWA approximation. We reproduce the effects DAT (dephasing assisted transport) and quantum bottleneck and established the nontrivial connections between them. Darkness and semi-darkness of atomic ensembles and their influence to the conductivity is also discussed.



## Biography

Yuri I Ozhigov was educated in Moscow State University of Lomonosov – MSU (Faculty of Mechanics and Mathematics in 1979) and obtained PhD degree in Algebra in 1982. He worked as Researcher in IT of building industry, then was Assistant Professor and Associate Professor in Moscow Textile Institute and Moscow Institute of Instruments and Tools (STANKIN). In 2000, he is leading Researcher in Institute of Physics and Technology of Russian Academy of Sciences (FTIAN). He obtained Doctor of Science degree in Theoretical Physics. From 2001, he is Full Professor of MSU (Faculty of Computational Mathematics and Cybernetics - VMK).

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