

RESONANT CHARACTERS OF A TURBID MEDIUM*

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Abstract

We examine the resonant characters of a turbid medium as it interacts with an input intensity modulated laser beam. The turbid medium is usually described by its absorption and scattering properties which generally produce monotonically reducing transmission. The system that we consider is a turbid medium between two reflecting mirrors. This permits us to reuse the light that without a mirror would be transmitted for further interaction with the medium. As a result resonant character emerges from such a system. We show that the dissipative nature of the medium due to absorption or scattering and the resonant factor due to the reflective function of the medium interplay in a non-trivial way and as a result modulate the transmitted or the reflected signal overall. Most of the result were derived from a model solution of the Boltzmann equation.

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[1] R. Wenning, Q. Su and R. Grobe, *Las. Phys.* (submitted) [2] For details see the web page of the Intense Laser Physics Theory Unit at www.phy.ilstu.edu/ILP

Category

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