

Atomic resonance in crossed linear polarization

A method and apparatus for deriving information on a light beam. The light beam is processed by an optical system to produce two quasi-collinear beams propagating in opposite directions, namely pump and probe beams with orthogonal linear polarizations. The beams interact with the medium contained in a cell, which medium is capable to manifest absorption resonance. As a result of the beams interaction with the medium, the intensity of the probe beam transmitted through the medium, considered along a predetermined polarization axis, becomes representative of a particular state of absorption resonance of the medium, which resonance occurs when the frequencies of the pump and probe beams are located within a narrow absorption resonance frequency bandwidth characterizing the medium.

The invention finds applications in the laser spectroscopy technology as well as in the construction of frequency stabilized laser sources, optical filters and optical communication systems, among others.
