ID de Contribution: **88** Type: **Poster**

Laser frequency stabilization using folded cavity and mirror reflectivity tuning

lundi 9 mai 2016 15:30 (1 heure)

A new method of laser frequency stabilization using polarization property of an optical cavity is proposed. In a standard Fabry–Perot cavity, the coating layers thickness of cavity mirrors is calculated to obtain the same phase shift for s- and p wave but a slight detuning from the nominal thickness can produce s- and p wave phase detuning. As a result, each wave accumulates a different round-trip phase shift and resonates at a different frequency. Using this polarization property, an error signal is generated by a simple setup consisting of a quarter wave-plate rotated at 45°, a polarizing beam splitter and two photodiodes.This method exhibits similar error signal as the Pound–Drever–Hall technique but without need for any frequency modulation. Lock theory and experimental results are presented in this poster.

Auteur principal: M. LIU, Xing (LAL)

Co-auteur: M. FAVIER, Pierre (Laboratoire de l'Accelerateur Lineaire)

Orateur: M. LIU, Xing (LAL)

Classification de Session: Poster session

Classification de thématique: Accelerator Physics