CAVITY-ENHANCED OPTICAL FREQUENCY COMB SPECTROSCOPY

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Cavity-enhanced optical frequency comb spectroscopy is a new technique that realizes simultaneously broad spectral coverage and high spectral resolution provided by an optical frequency comb as well as ultrahigh detection sensitivities enabled with a high-finesse optical cavity [1]. These powerful capabilities have been demonstrated in a series of experiments where real-time detection and identification of many different molecular states or species are achieved in a massively parallel fashion [2,3]. We will discuss the principle, technical requirements, and various implementations for this spectroscopic approach, as well as applications that include trace gas detections, human breath analysis, and characterization of cold and ultracold molecules [4,5,6].

References:

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