

Ionization in Direct Frequency Comb Spectroscopy

Brett DePaola

Department of Physics, Kansas State University

In Direct Frequency Comb Spectroscopy (DFCS) a high repetition rate, broad bandwidth, short pulse width laser is used to probe atomic or molecular structure. Generally, when the comb laser excites the target system to some excited state, the system fluoresces and the emitted light is detected. However, because the comb laser pulses have high peak intensity, ionization of the system could also be possible. We report a theoretical and experimental investigation of this ionization process, the goal of which is to determine if the ion signal could be a viable diagnostic in DFCS.