

The fluorescence-detected transient absorption (F-PP) technique has recently gained significant attention within the spectroscopic community for its numerous advantages. However, several aspects of these spectra remain unexplored. In this thesis, we investigated some of them, including the characterization of F-PP spectra for negative times. Our objective was to use these spectra to suppress incoherent mixing, a pursuit that ultimately proved almost impossible. Additionally, we examined the influence of pulse chirp on F-PP spectra. We proved that it does not change the main behaviour in longer times and only shifts the dynamic of a particular frequency according to the time delay caused by the chirp. Furthermore, we discussed its influence on the shape of the spectra for pulse overlap.