

“Alignment of Symmetric Top Molecules by Short Laser Pulses”

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In many areas of chemistry the ability to control the orientation of molecules in space is a desired tool. This tool could be used both in experiments exploring orientational effects in chemical reaction and for studying the electronic properties of the molecule. Although many techniques have been used over the years to achieve control over molecular orientation the more recent discovery of laser induced alignment seems particularly promising. One most interesting aspect of laser induced alignment is the ability to create alignment after the laser pulse is tuned off, i.e. alignment under field-free conditions. This is possible if laser pulses much shorter than the rotational period of the molecules are used. This talk will focus on alignment in this nonadiabatic limit. A particular focus will be on alignment of symmetric top molecules.