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## Resolving Strong Field Dynamics in Cation States of CO2 via Optimised Molecular Alignment (Springer Theses)

By Malte Oppermann

Springer. Paperback. Condition: New. 205 pages. This thesis presents an experimental study of the ultrafast molecular dynamics of CO2 that are induced by a strong, near-infrared, femtosecond laser pulse. In particular, typical strong field phenomena such as tunneling ionisation, nonsequential double ionisation and photo-induced dissociation are investigated and controlled by employing an experimental technique called impulsive molecular alignment. Here, a first laser pulse fixes the molecule in space, such that the molecular dynamics can be studied as a function of the molecular geometry with a second laser pulse. The experiments are placed within the context of the study and control of ultrafast molecular dynamics, where sub-femtosecond (10-15 seconds) resolution in ever larger molecular systems represents the current frontier of research. The thesis presents the required background in strong field and molecular physics, femtosecond laser architecture and experimental techniques in a clear and accessible language that does not require any previous knowledge in these fields. This item ships from multiple locations. Your book may arrive from Roseburg,OR, La Vergne,TN. Paperback.



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