Mikrowellenspektrum, Dipolmoment und Struktur von Cyclobutanon

Doctoral Thesis**Author(s):**

Bauder, Alfred Christian

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Mikrowellenspektrum, Dipolmoment und Struktur von Cyclobutanon

Von der

EIDGENÖSSISCHEN TECHNISCHEN
HOCHSCHULE IN ZÜRICH

zur Erlangung
der Würde eines Doktors der
Naturwissenschaften
genehmigte

PROMOTIONSARBEIT

Vorgelegt von

ALFRED CHRISTIAN BAUDER

dipl. Naturwissenschaftler E. T. H.
von Zürich

Referent: Herr Prof. Dr. Hs. H. Günthard

Korreferent: Herr Prof. H. Primas

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SUMMARY

The microwave spectra of cyclobutanone and of three isotopically substituted cyclobutanone molecules have been measured and the rotational constants determined. From the observation of the STARK effect it could be concluded that the four-membered carbon ring must be planar. Further it was possible to calculate the structure of cyclobutanone from the moments of inertia, with only one arbitrary assumption. STARK effect measurements yielded a value of 2,98 D for the dipole moment of cyclobutanone.