

<b>Zeitschrift:</b>	Helvetica Physica Acta
<b>Band:</b>	50 (1977)
<b>Heft:</b>	1
<b>Rubrik:</b>	Zusammenfassungen der letzten eingegangenen Arbeiten = Résumés des derniers articles reçus

#### Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

#### Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

#### Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

**Download PDF:** 07.08.2025

**ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>**

**HELVETICA PHYSICA ACTA**  
**Zusammenfassungen der letzten eingegangenen Arbeiten**  
**Résumés des derniers articles reçus**

---

**Projective representations of the Schrödinger group**

by M. PERROUD

Centre de Recherches Mathématiques, Université de Montréal, Montréal, Québec

*Abstract.* A classification of the projective unitary irreducible representations of the Schrödinger group  $S(3)$  is given and a representative of each class is explicitly constructed by the method of induced representations. The connection between some of these representatives and the realizations found by U. Niederer on spaces of wave functions is established. The physical interpretation of these representations is very similar to the case of the Galilei group; however the usefulness of generalizing the concept of elementary systems to these representations is not very clear in view of the appearance of an infinite number of degrees of internal freedom.

**Dynamics of the Dicke Laser model II: an example of a semi-classical theory in the presence of focal points**

by G. SCHARF

Institut für Theoretische Physik der Universität, Zürich, Schönberggasse 9, CH-8001 Zürich

*Abstract.* The nature of the time-dependent WKB-Maslov approximation is investigated for the quantum mechanical system which is equivalent to the Dicke Laser model. The local semi-classical solution and its continuation beyond the focal points are discussed.

**On the derivation of the Onsager-Casimir reciprocal relations from the principles of thermodynamics**

by C. GRUBER

Laboratoire de Physique Théorique, Ecole Polytechnique Fédérale, Lausanne, Switzerland

*Abstract.* It is shown that for certain discrete systems the Casimir anti-symmetry relations follow from the basic principles of thermodynamics without assuming linear laws and microscopic reversibility.

**Unrestricted solution of the Eliashberg equations for Nb**

by M. PETER, J. ASHKENAZI and M. DACOROGNA

Département de Physique de la Matière Condensée, Université de Genève, Suisse

*Abstract.* The Eliashberg equations for superconductivity are solved numerically for Nb using band structure results and experimental phonon spectrum. The solution is done unrestrictedly in the sense that all anisotropy effects as well as the frequency dependence of the gap function are treated correctly. The electron-phonon coupling constants are evaluated in the rigid-ion approximation, and the Coulomb interaction is treated on the same level using typical parameters. The method used requires reasonable computer time which could make it applicable for rather complicated materials. The anisotropy effects on the gap function and  $T_c$  are studied with some detail.

