

Zeitschrift: Archives des sciences [1948-1980]
Herausgeber: Société de Physique et d'Histoire Naturelle de Genève
Band: 27 (1974)
Heft: 2-3: EPR of magnetic ions in metals

Inhaltsverzeichnis

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: 20.07.2025

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

Proceedings of the Conference of Haute-Nendaz
3-5 September 1973

Edited by

G. Cohen and B. Giovannini

EPR OF MAGNETIC IONS IN METALS

	Pages
Contents	136
List of participants	136
ORBACH, R., M. PETER and D. SHALTIEL. — The magnetic resonance of dilute magnetic alloys	141
DAVIDOV, D. and C. RETTORI. — Crystalline field effects in metals	191
TAYLOR, R. H. and B. R. COLES. — Anomalous ESR behaviour of some Rare-earth inter-metallic compounds above the Néel point	197
ELSCHNER, B., H. LUFT, W. SCHÄFER and G. SCHÖN. — Resolved fine structure of Eu^{2+} in $BaAl_4$	203
BABERSCHKE, K. — Effects of the excited crystalline field states in the ESR of $Er:Au$	209
SPERLICH, G. — ESR and electronic structure of transition element compounds	215
SIEBERT, J. F., S. A. DODDS and R. H. SILSBEE. — Exchange and crystal field parameters from TESR of $Al:Er$	239
DRULIS, H. — Electron spin resonance of Gd^{3+} ions in lanthanum and yttrium hydrides.	243
GOURDON, J. C., B. VIGOUROUX and J. PESCIA. — Relaxation of localized moments in Gd pure metal, above the Curie temperature. Determination of T_{fl} , T_{fs} and T_{sf}	249
GÖTZE, Wolfgang. — Theories of the static and dynamic Kondo susceptibility	257
ZITKOVA-WILCOX, J. — Dynamical susceptibility of a dilute magnetic alloy in the Anderson model	269
HIRST, L. L. — Magnetic resonance in 3d impurities in metals	279
RIVIER, N. — On a rotational-invariant dynamic susceptibility for dilute alloys	295
WALKER, M. B. — Transmission electron spin resonance. The interpretation of two experiments	301
YAFET, Y. — Direct relaxation of a local moment spin to the lattice	315
CORNUT, B. and B. COQBLIN. — E.P.R. conduction-electron relaxation by Cerium and Gadolinium impurities in $LaAl_2$	323
WALSTEDT, R. E. — Nuclear magnetic resonance and relaxation in metals containing magnetic impurities	329
STEINER, P. — Mössbauer effect measurements on magnetic impurities in metals	343
WÖLFLE, P. — Mössbauer spectroscopy: a probe of local spin relaxation in metals	357

CONTENTS

<i>List of participants</i>	137
 I. GENERAL REVIEW	
<i>The magnetic resonance of dilute magnetic alloys</i> by R. Orbach, M. Peter and D. Shaltiel .	141
 II. EXPERIMENTAL RESULTS	
<i>Crystalline field effects in metals</i> by D. Davidov and C. Rettori	191
<i>Anomalous ESR behaviour of some Rare-Earth intermetallic compounds above the Néel point</i> by R. H. Taylor and B. R. Coles	197
<i>Resolved fine structure of Eu^{2+} in BaAl_4</i> by B. Elschner, H. Luft, W. Schäfer and G. Schön	203
<i>Effects of the excited crystalline field states in the ESR of $\text{Er} : \text{Au}$</i> by K. Baberschke	209
<i>ESR and electronic structure of transition element compounds</i> by G. Sperlich	215
<i>Exchange and crystal field parameters from TESR of $\text{Al} : \text{Er}$</i> by J. F. Siebert, S. A. Dodds and R. H. Silsbee	239
<i>Electron spin resonance of Gd^{3+} ions in Lanthanum and Yttrium hydrides</i> by H. Drulis	243
<i>Relaxation of localized moments in Gd pure metal, above the Curie temperature. Determination of T_{fl}, T_{fs} and T_{sf}</i> by J. C. Gourdon, B. Vigouroux and J. Pescia	249
 III. THEORY	
<i>Theories of the static and dynamic Kondo susceptibility</i> by W. Götze	257
<i>Dynamical susceptibility of a dilute magnetic alloy in the Anderson model</i> by J. Zitkova-Wilcox	269
<i>Magnetic resonance in 3d impurities in metals</i> by L. L. Hirst	279
<i>On a rotational-invariant dynamic susceptibility for dilute alloys</i> by N. Rivier	295
<i>Transmission electron spin resonance. The interpretation of two experiments</i> by M. B. Walker	301
<i>Direct relaxation of a local moment spin to the lattice</i> by Y. Yafet	315
<i>EPR conduction-electron relaxation by cerium and gadolinium impurities in LaAl_2</i> by B. Cornut and B. Coqblin	323
 IV. RELATED SUBJECTS	
<i>Nuclear magnetic resonance and relaxation in metals containing magnetic impurities</i> by R. E. Walstedt	329
<i>Mössbauer effect measurements on magnetic impurities in metals</i> by P. Steiner	343
<i>Mössbauer spectroscopy : a probe of local spin relaxation in metals</i> by P. Wölflé	357

LIST OF PARTICIPANTS

ALLOUL H.	Université Paris Sud-Centre Orsay, Lab. Physique des Solides, 91 Orsay, France.
BABERSCHKE K.	Freie Universität Berlin, IV Phys. Inst., Boltzmannstrasse 20, 1000 Berlin 33, Allemagne.
BARNES S.	Dept. of Math. Physics, University of Birmingham, <i>Birmingham</i> <i>B15 2TT</i> , Angleterre

- BÉNÉ G. Ecole de Physique, Dept. de la Matière Condensée, 32, Bd. d'Yvoy, 1211 *Genève* 4, Suisse.
- BERNIER P. Université Paris Sud-Centre Orsay, Lab. Physique des Solides, 91 *Orsay*, France.
- BILL H. Dept. de Chimie Physique, Université de Genève, 11bis rue des Maraîchers, 1211 *Genève* 4, Suisse.
- BLEANEY B. Clarendon Lab., Dept. of Physics, Parks Road, *Oxford*, Angleterre.
- BOSSE J. Freie Universität Berlin, Boltzmannstrasse 20, 1000 *Berlin* 33, Allemagne
- BUTTET J. Ecole de Physique, 32, Bd. d'Yvoy, 1211 *Genève* 4, Suisse.
- CLARK W. G. University of California, Los Angeles, Physics Dept., *Los Angeles, Calif.* 90024, USA.
- COHEN G. Ecole de Physique, 32, Bd. d'Yvoy, 1211 *Genève* 4, Suisse.
- DAVIDOV D. Dept. of Physics, U.C.L.A., *Los Angeles, Calif.* 90024, USA.
- DESCOUTS P. Ecole de Physique, 32, Bd. d'Yvoy, 1211 *Genève* 4, Suisse.
- DIXON J. School of Physics, University of Warwick, *Coventry* CV4 7AL, Angleterre.
- DRULIS H. Inst. of Low Temperature and Structure Res., Polish Acad. of Sciences, P.O. Box 937, 50-950 *Wroclaw* 2, Pologne.
- DUPREE R. School of Physics, University of Warwick, *Coventry* CV4 7AL, Angleterre.
- ELSCHNER B. Technische Hochschule Darmstadt, Phys. Institut, Hochschulstrasse 2, 61 *Darmstadt*, Allemagne.
- FALKOWSKI K. Clarendon Lab., Dept. of Physics, Parks Road, *Oxford*, Angleterre.
- GESCHWIND S. Bell Telephone Lab., *Murray Hill, New Jersey* 07974, USA.
- GIOVANNINI B. Ecole de Physique, Dept. de la Matière Condensée, 32, Bd. d'Yvoy, 1211 *Genève* 4, Suisse.
-
- GONZALEZ
JIMENEZ F. Centre d'Etudes Nucléaires de Saclay, B.P. 2, 91 *Gif-Sur-Yvette*, France.
- GOETZE W. Max Planck-Institut, Föhringer Ring 6, 8 *München* 40, Allemagne.
- GOMES A. Centro Brasileiro de Pesquisas Fisicas, Av. Wenceslau Braz 71 ZC-8, *Rio de Janeiro* GB, Brésil.
- GOURDON M. Lab. de Magnét. et d'Electronique quantique, 39, Allées Jules Guesde, Université Paul Sabatier, 31077 *Toulouse Cedex*, France.
- HARDIMAN M. University of Exeter, Physics Dept., Stocker Road, *Exeter* EX4 4QL, Angleterre.
- HIRST L. Institut Laue-Langevin, Aussenstelle Garching, 8046 *Garching*, Allemagne.

- HURDEQUINT H. Université Paris-Sud Centre Orsay, Lab. Physique des Solides, 38 *Grenoble*, France.
- IMBERT P. Centre d'Etudes Nucléaires de Saclay, 91 *Gif-Sur-Yvette*, France.
- JANOSSY A. Central Res. Institute for Physics, P.O. Box 49, 1525 *Budapest* 114, Hongrie.
- KANAMORI J. Faculty of Science, Dept. of Physics, Osaka University, *Toyonaka*, Osaka 560, Japan.
- KAPLAN N. Hebrew University, Physics Dept., *Jerusalem*, Israël.
- KEITER H. Theoret. Physik, Universität zu Köln, Universitätsstrasse 14, 5 *Köln* 41, Allemagne.
- LUFT H. Techn. Hochschule Darmstadt, Experimentalphysik II, Hochschulstr. 2, 61 *Darmstadt*, Allemagne.
- MARTINEZ E. Max Planck Institut für Physik & Astrophysik, Föhringer Ring 6, 8 *München* 40, Allemagne.
- MINIER M. Laboratoire de Spectrométrie Physique, Université Scientifique et Médicale de Grenoble, B.P. 53, Centre de Tri, 38041 *Grenoble Cedex*, France.
- MONOD P. Université Paris Sud-Centre Orsay, Laboratoire Physique des Solides, 91 *Orsay*, France.
- NARATH A. Sandia Laboratories, *Albuquerque*, New Mexico 87115, USA.
- ORBACH R. Dept. of Physics, U.C.L.A., Los Angeles, Calif. 90024, USA.
- OWEN J. Clarendon Lab., Dept. of Physics, Parks Road, *Oxford*, Angleterre.
- PANISSOD P. Université Louis Pasteur, Lab. de Structure électron. des Solides, 4, rue Blaise Pascal, 67000 *Strasbourg*, France.
- PESCIA J. Lab. de Magnét. et d'Electronique quantique, 39, Allées Jules Guesde, Université Paul Sabatier, 31077 *Toulouse Cedex*, France.
- PETER M. Section Physique, Université de Genève, 32, Bd. d'Yvoy, 1211 *Genève* 4, Suisse.
- PLEFKA T. Lehrstuhl für Theorie des Festkörpers, Techn. Hochschule Darmstadt, 61 *Darmstadt*, Allemagne.
- PRADDAUDE H. Magnet Lab., M.I.T., 170 Albany Street, *Cambridge*, Mass. 02139, USA.
- RETTORI C. Dept. of Physics, U.C.L.A., *Los Angeles*, Calif. 90024, USA.
- RIVIER N. Imperial Coll. of Science and Techn., Dept. of Physics, Prince Consort Road, *London* S.W.7 2AZ, Angleterre.
- SHALTIEL D. Hebrew University, Physics Dept., *Jerusalem*, Israël.
- SILSBEE R. Cornell University, Dept. of Physics, Clark Hall, *Ithaca*. New York 14850, USA.

- SPERLICH G. Techn. Hochschule Darmstadt, Phys. Institut, Hochschulstrasse 2, 61 *Darmstadt*, Allemagne.
- SUSS J. Solid State Physics Dept., Soreq Nuclear Res. Est., *Yavne*, Israël.
- SCHÄFER W. Techn. Hochschule Darmstadt Phys. Institut, Hochschulstrasse 2, 61 *Darmstadt*, Allemagne.
- SCHLOTTMANN P. Max Planck Institut für Physik & Astrophysik, Föhringer Ring 6, 8 *München* 40, Allemagne.
- SCHOTTE K. D. Phys. Institut der Freien Universität, Königin-Luisestrasse 28—30, 1 *Berlin* 33, Allemagne.
- STEINER P. Freie Universität Berlin, IV Phys. Institut, Boltzmannstrasse 20, 1000 *Berlin* 33, Allemagne.
- STEWART A. Imperial College of Science & Techn., Physics Dept., Prince Consort Road, *London* S.W.7 2AZ, Angleterre.
- STÖHR J. Physik Dept., Technische Universität München, 8 *München*, Allemagne.
- TAYLOR R. H. Dept. of Physics, Imperial College, Prince Consort Road, *London* S.W.7 2AZ, Angleterre.
- VIGOUROUX M. Lab. de Magnétique et d'Electronique quant., 39, Allées Jules Guesde, Université Paul Sabatier, 31077 *Toulouse Cedex*, France.
- WALKER M. B. University of Toronto, Physics Dept., *Toronto* 5, Ontario, Canada.
- WALSTEDT R. Bell Telephone Lab., *Murray Hill*, New Jersey 07974, USA.
- WILKINS J. Cornell University, Dept. of Physics, *Ithaca*, New York 14850, U.S.A.
- WÖGER W. Theoret. Physik, Universität zu Köln, Universitätsstrasse 14, 5 *Köln* 41, Allemagne.
- WÖLFLE P. Max Planck Institut für Physik & Astrophysik, Föhringer Ring 6, 8 *München* 40, Allemagne.
- YAFET Y. Bell Telephone Lab., *Murray Hill*, N.J. 07974, USA.
- ZINGG W. Ecole de Physique, 32 Bd. d'Yvoy, 1211 *Genève* 4, Suisse.
- WILCOX-
ZITKOVA J. Tufts University, Phys. Dept., *Medford, Mass.*, USA.