

Map of the polarization-dependent part of the inelastic-neutron scattering function S for the ferromagnet MnSi. The dependence of S on neutron polarization indicates the presence of chiral spin fluctuations in the crystal, caused by spin-orbit coupling. See article 237204.

PHYSICAL REVIEW LETTERS

Contents

VOLUME 88, NUMBER 23 10 June 2002

Announcement

Color Online Only for Physical Review E and Physical Review Letters i

General Physics

Complementarity for Generalized Observables 230401
Alfredo Luis

Quantum Entropy and Special Relativity 230402
Asher Peres, Petra F. Scudo, and Daniel R. Terno

Internal Waves and Synchronized Precession in a Cold Vapor 230403
M. Ö. Oktel and L. S. Levitov

Internal State Conversion in Ultracold Gases 230404
J. N. Fuchs, D. M. Gangardt, and F. Laloë

Longitudinal Spin Waves in a Dilute Bose Gas 230405
J. E. Williams, T. Nikuni, and Charles W. Clark

Quadratic Bell Inequalities as Tests for Multipartite Entanglement 230406
Jos Uffink

Noise Activated Nonlinear Dynamic Sensors 230601
L. Gammaitoni and A. R. Bulsara

Noise-Induced Phase Synchronization and Synchronization Transitions in Chaotic Oscillators 230602
Changsong Zhou and Jürgen Kurths

Gravitation and Astrophysics

String Inspired Brane World Cosmology 231101
Cristiano Germani and Carlos F. Sopuerta

Experimental Demonstration of a Squeezing-Enhanced Power-Recycled Michelson Interferometer for Gravitational Wave Detection 231102
Kirk McKenzie, Daniel A. Shaddock, David E. McClelland, Ben C. Buchler, and Ping Koy Lam

Constraining Dark Energy with Sunyaev-Zel'dovich Cluster Surveys 231301
Jochen Weller, Richard A. Battye, and Rüdiger Kneissl

Elementary Particles and Fields

Photon Propagator, Monopoles, and the Thermal Phase Transition in Three Dimensional Compact QED 231601
M. N. Chernodub, E.-M. Ilgenfritz, and A. Schiller

Search for T and CP Violation in B^0-$\overline{B}^0$ Mixing with Inclusive Dilepton Events 231801
B. Aubert *et al.* (*BABAR* Collaboration)

Anomaly, Gauge and Gaugino Mediation in Brane Worlds with Messenger Matter 231802
Ann E. Nelson and Neal J. Weiner

Improved Measurement of $|V_{ub}|$ with Inclusive Semileptonic B Decays 231803
A. Bornheim *et al.* (CLEO Collaboration)

(Continued on Third Cover)

PRL 88 (23), 230401–239904, 10 June 2002 (288 total pages)

Copyright 2002 by The American Physical Society

Deconfinement Transition in Three-Dimensional Compact U(1) Gauge Theories Coupled to Matter Fields 232001
Hagen Kleinert, Flavio S. Nogueira, and Asle Sudbø
Helicity Amplitudes $A_{1/2}$ and $A_{3/2}$ for the $D_{13}(1520)$ Resonance Obtained from the $\vec{\gamma}\vec{p} \rightarrow p\pi^0$ Reaction 232002
J. Ahrens *et al.* (GDH and A2 Collaborations)

Nuclear Physics
J/ψ Suppression in Nucleus-Nucleus Collisions 232301
Jianwei Qiu, James P. Vary, and Xiaofei Zhang
J/ψ Suppression in Pb + Pb Collisions: A Conventional Description 232302
A. K. Chaudhuri
Cronin Effect in Hadron Production Off Nuclei 232303
B. Z. Kopeliovich, J. Nemchik, A. Schäfer, and A. V. Tarasov
$B(E2)$ Values in ^{150}Nd and the Critical Point Symmetry X(5) 232501
R. Krücken, B. Albanna, C. Bialik, R. F. Casten, J. R. Cooper, A. Dewald, N. V. Zamfir, C. J. Barton, C. W. Beausang, M. A. Caprio, A. A. Hecht, T. Klug, J. R. Novak, N. Pietralla, and P. von Brentano

Atomic, Molecular, and Optical Physics
Suppression of Multiple Ionization of Atomic Ions in Intense Ultrafast Laser Pulses 233001
J. B. Greenwood, I. M. G. Johnston, P. McKenna, I. D. Williams, T. R. J. Goodworth, J. H. Sanderson, W. A. Bryan, A. A. A. El-Zein, W. R. Newell, A. J. Langley, and E. J. Divall
Bubble Formation and Decay in ^{3}He and ^{4}He Clusters 233401
K. von Haeften, T. Laarmann, H. Wabnitz, and T. Möller
Orientation of Polar Molecules by Laser Induced Adiabatic Passage 233601
S. Guérin, L. P. Yatsenko, H. R. Jauslin, O. Faucher, and B. Lavorel

Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.
Sum-Frequency Generation in Dissipative Systems: Experimental Evidence for Optical Wave Patterns 233901
S. Residori, A. Petrossian, and L. Gil
Phase-Space Transport of Stochastic Chaos in Population Dynamics of Virus Spread 234101
Lora Billings, Erik M. Bollt, and Ira B. Schwartz
Ordered Clusters and Dynamical States of Particles in a Vibrated Fluid 234301
Greg A. Voth, B. Bigger, M. R. Buckley, W. Losert, M. P. Brenner, H. A. Stone, and J. P. Gollub
Pattern Dynamics of Vortex Ripples in Sand: Nonlinear Modeling and Experimental Validation 234302
K. H. Andersen, M. Abel, J. Krug, C. Ellegaard, L. R. Søndergaard, and J. Udesen
Influence of Stagnant Zones on Transient and Asymptotic Dispersion in Macroscopically Homogeneous Porous Media 234501
D. Kandhai, D. Hlushkou, A. G. Hoekstra, P. M. A. Sloot, H. Van As, and U. Tallarek

Plasma and Beam Physics
Evidence for Microbunching "Sidebands" in a Saturated Free-Electron Laser Using Coherent Optical Transition Radiation 234801
A. H. Lumpkin, R. Dejus, J. W. Lewellen, W. Berg, S. Biedron, M. Borland, Y. C. Chae, M. Erdmann, Z. Huang, K.-J. Kim, Y. Li, S. V. Milton, E. Moog, D. W. Rule, V. Sajaev, and B. X. Yang
Indirect-Drive Inertial Confinement Fusion Using Highly Supersonic, Radiatively Cooled, Plasma Slugs 235001
J. P. Chittenden, M. Dunne, M. Zepf, S. V. Lebedev, A. Ciardi, and S. N. Bland
Anomalous Absorption of High-Energy Green Laser Light in High-Z Plasmas 235002
S. H. Glenzer, W. Rozmus, V. Yu. Bychenkov, J. D. Moody, J. Albritton, R. L. Berger, A. Brantov, M. E. Foord, B. J. MacGowan, R. K. Kirkwood, H. A. Baldis, and E. A. Williams
Mode Locking in Reversed-Field Pinch Experiments 235003
H. K. Ebraheem, J. L. Shohet, and A. C. Scott
Suppression of Superluminous Precursors in High-Power Backward Raman Amplifiers 235004
Yu. A. Tsidulko, V. M. Malkin, and N. J. Fisch

(Continued on Preceding Page)

Condensed Matter: Structure, etc.

A Fourfold Coordinated Point Defect in Silicon 235501
Stefan Goedecker, Thierry Deutsch, and Luc Billard

Equation of State Data for Iron at Pressures beyond 10 Mbar 235502
D. Batani, A. Morelli, M. Tomasini, A. Benuzzi-Mounaix, F. Philippe, M. Koenig, B. Marchet, I. Masclet, M. Rabec, Ch. Reverdin, R. Cauble, P. Celliers, G. Collins, L. Da Silva, T. Hall, M. Moret, B. Sacchi, P. Baclet, and B. Cathala

Thermodynamics of the Superfluid Dilute Bose Gas with Disorder 235503
A. V. Lopatin and V. M. Vinokur

Metal-Encapsulated Caged Clusters of Germanium with Large Gaps and Different Growth Behavior than Silicon ... 235504
Vijay Kumar and Yoshiyuki Kawazoe

Tip Splittings and Phase Transitions in the Dielectric Breakdown Model: Mapping to the Diffusion-Limited Aggregation Model 235505
Joachim Mathiesen and Mogens H. Jensen

Phonon Softening in Metallic Nanotubes by a Peierls-like Mechanism 235506
O. Dubay, G. Kresse, and H. Kuzmany

Novel Pattern Forming Process Due to the Coupling of Convection and Phase Change 235507
P. Mazumder and R. Trivedi

Dewetting of Glassy Polymer Films 236101
Vijay Shenoy and Ashutosh Sharma

Non-Nearest-Neighbor Jumps in 2D Diffusion: Pd on W(110) 236102
Sang-Mun Oh, Seong Jin Koh, Kentaro Kyuno, and Gert Ehrlich

Condensed Matter: Electronic Properties, etc.

Onset of Glassy Dynamics in a Two-Dimensional Electron System in Silicon 236401
Snežana Bogdanovich and Dragana Popović

Quenching of Majority-Channel Quasiparticle Excitations in Cobalt 236402
S. Monastra, F. Manghi, C. A. Rozzi, C. Arcangeli, E. Wetli, H.-J. Neff, T. Greber, and J. Osterwalder

Fermi Surface of $3d^1$ Perovskite $CaVO_3$ near the Mott Transition 236403
I. H. Inoue, C. Bergemann, I. Hase, and S. R. Julian

Mechanisms of Spin-Polarized Current-Driven Magnetization Switching 236601
S. Zhang, P. M. Levy, and A. Fert

Viscous Fingering and the Shape of an Electronic Droplet in the Quantum Hall Regime 236801
Oded Agam, Eldad Bettelheim, P. Wiegmann, and A. Zabrodin

Nonequilibrium Transport through a Vertical Quantum Dot in the Absence of Spin-Flip Energy Relaxation 236802
T. Fujisawa, D. G. Austing, Y. Tokura, Y. Hirayama, and S. Tarucha

Effects of Crystal Shape on the Energy Levels of Zero-Dimensional PbS Quantum Dots 236803
Z. Hens, D. Vanmaekelbergh, E. J. A. J. Stoffels, and H. van Kempen

Tunneling and Nonhyperbolicity in Quantum Dots 236804
Alessandro P. S. de Moura, Ying-Cheng Lai, Richard Akis, Jonathan P. Bird, and David K. Ferry

Observation of Structures of Chain Vortices Inside Anisotropic High-T_c Superconductors 237001
A. Tonomura, H. Kasai, O. Kamimura, T. Matsuda, K. Harada, T. Yoshida, T. Akashi, J. Shimoyama, K. Kishio, T. Hanaguri, K. Kitazawa, T. Masui, S. Tajima, N. Koshizuka, P. L. Gammel, D. Bishop, M. Sasase, and S. Okayasu

Heterogeneous Aging in Spin Glasses 237201
Horacio E. Castillo, Claudio Chamon, Leticia F. Cugliandolo, and Malcolm P. Kennett

Scaling Approach to the Magnetic Phase Diagram of Nanosized Systems 237202
J. d'Albuquerque e Castro, D. Altbir, J. C. Retamal, and P. Vargas

Unusual Nature of Ferromagnetism Coexisting with Superconductivity in UGe_2 237203
T. Nishioka, G. Motoyama, S. Nakamura, H. Kadoya, and N. K. Sato

Chiral Fluctuations in MnSi above the Curie Temperature 237204
B. Roessli, P. Böni, W. E. Fischer, and Y. Endoh

SU(2) Instantons with Boundary Jumps and Spin Tunneling in Magnetic Molecules 237205
Ersin Keçecioğlu and Anupam Garg

(Continued on Preceding Page)

Contents (Continued)

Solution of the Two-Channel Anderson Impurity Model: Implications for the Heavy Fermion UBe_{13} 237206
C. J. Bolech and N. Andrei
X-Ray Magnetochiral Dichroism: A New Spectroscopic Probe of Parity Nonconserving Magnetic Solids 237401
J. Goulon, A. Rogalev, F. Wilhelm, C. Goulon-Ginet, P. Carra, D. Cabaret, and C. Brouder
Tailoring Confining Barriers for Surface States by Step Decoration: CO/Vicinal Cu(111) 237601
F. Baumberger, T. Greber, B. Delley, and J. Osterwalder

Interdisciplinary Physics: Biological Physics, Quantum Information, etc.

Computational Capacity of the Universe 237901
Seth Lloyd
Interaction Cost of Nonlocal Gates 237902
G. Vidal, K. Hammerer, and J. I. Cirac
Formation and Interaction of Membrane Tubes 238101
Imre Derényi, Frank Jülicher, and Jacques Prost
Collective Dynamics of Chaotic Chemical Oscillators and the Law of Large Numbers 238301
István Z. Kiss, Yumei Zhai, and John L. Hudson
Quantitative Electron Holography of Biased Semiconductor Devices 238302
A. C. Twitchett, R. E. Dunin-Borkowski, and P. A. Midgley
Foreshocks and Aftershocks in the Olami-Feder-Christensen Model 238501
Stefan Hergarten and Horst J. Neugebauer
Network Topology of a Potential Energy Landscape: A Static Scale-Free Network 238701
Jonathan P. K. Doye
Self-Segregation versus Clustering in the Evolutionary Minority Game 238702
Shahar Hod and Ehud Nakar

Comments

Comment on "Anomalous Stimulated Brillouin Scattering via Ultraslow Light" 239301
Valeri I. Kovalev
Matsko *et al.* Reply 239302
A. B. Matsko, Y. V. Rostovtsev, M. Fleischhauer, and M. O. Scully

Errata

Erratum: Non-Stoner Continuum in the Double Exchange Model [Phys. Rev. Lett. **86**, 003634 (2001)] 239901
T. A. Kaplan, S. D. Mahanti, and Y.-S. Su
Erratum: Vertex Corrections near the Stripe Phase [Phys. Rev. Lett. **88**, 066403 (2002)] 239902
S. Caprara, C. Di Castro, P. Werner, and W. Zwerger
Erratum: Shear Instability of γ-Fe in Bulk and in Ultrathin Films [Phys. Rev. Lett. **88**, 056101 (2002)] 239903
D. Spišák and J. Hafner
Erratum: Band Structure Approach to Resonant X-Ray Scattering [Phys. Rev. Lett. **88**, 015504 (2002)] 239904
I. S. Elfimov, N. A. Skorikov, V. I. Anisimov, and G. A. Sawatzky

Physical Review Focus

Brief explanations of selected papers from this and other APS journals appear regularly at the Phys. Rev. Focus web site. Readers can also sign up for weekly e-mail summaries of Focus stories.