

Condensed Matter Theory Group**1. Journals**

- 1) Resonant Inelastic X-ray Scattering at the K edge of Ge
NISIKAWA Yunori, USUDA Manabu, IGARASHI Jun-ichi, SHOJI Hironobu, IWAZUMI Toshiaki
Journal of the Physical Society of Japan, 73, 970-975,(2004/04)
- 2) Possible Pairing Symmetry of Superconductor $\text{Na}_x\text{CoO}_2\cdot y\text{H}_2\text{O}$
NISIKAWA Yunori, IKEDA Hiroaki, YAMADA Kosaku
Journal of the Physical Society of Japan, 73, 1127-1130,(2004/05)
- 3) Magnetic resonant x-ray scattering at the GaK edge in UGa_3 : A band theoretical approach
USUDA Manabu, IGARASHI Jun-ichi, KODAMA Akio
Physical Review B 69, 224401(1-5),(2004/06)
- 4) Theoretical Study on Resonant Inelastic X-ray Scattering in Quasi-One-dimensional Cuprates
NOMURA Takuji, IGARASHI Jun-ichi
Journal of the Physical Society of Japan, 73, 1677-1680,(2004/07)
- 5) Higher order perturbation theory for anisotropic pairings in repulsive Hubbard model
NOMURA Takuji, YAMADA Kosaku
Physica C 408-410, 300-301,(2004/08)
- 6) Frustration-induced eta inversion in the $S=1/2$ bond-alternating spin chain
MAESHIMA Nobuya, OKUNISHI Koichi, OKAMOTO Kiyomi, SAKAI Toru
Physical Review Letters, 93, 127203(1-4),(2004/09)
- 7) Anisotropy of Resonant Inelastic X-ray Scattering at the K edge of Si: Theoretical Analysis
NISIKAWA Yunori, USUDA Manabu, IGARASHI Jun-ichi
Journal of the Physical Society of Japan, 73, 3171-3176,(2004/11)
- 8) Progress in the Theory of Anisotropic Superconductivity on the Basis of the Fermi Liquid Theory
NOMURA Takuji, YAMADA Kosaku
Butsuri, 59, 893-897,(2004/12)
- 9) Analysis of resonant inelastic x-ray scattering in La_2CuO_4
NOMURA Takuji, IGARASHI Jun-ichi
Physical Review B 71, 035110(1-5),(2005/01)
- 10) Compton scattering study of the silicon clathrate $\text{Ba}_8\text{Si}_{46}$: Experiment and theory
M. Itou, Y. Sakurai, M. Usuda, C. Cros, H. Fukuoka, S. Yamanaka
Physical Review B 71, 125125(1-4),(2005/03)
- 11) An Ab-Initio Calculation of Magnetic Resonant X-Ray Scattering Spectra in NiO
USUDA Manabu, TAKAHASHI Manabu, IGARASHI Jun-ichi
Physical Review B 69, 014408(1-7),(2004)
- 12) Anomalous magnetization process in frustrated spin ladders
SAKAI Toru, OKAMOTO Kiyomi, OKUNISHI Kouichi, SATO Masanori
Journal of Physics: Condensed Matter, 16, S785-789,(2004)
- 13) Field-Induced Spin Liquids and Orders in Quasi-1D Gapped Systems
SAKAI Toru
Journal of Magnetism and Magnetic Materials, 272-276, 865-866,(2004)
- 14) Magnetization plateaus and cusp in $S=1$ spin ladder
SAKAI Toru, OKAMOTO Kiyomi, OKUNISHI Kouichi, KINDO Koichi, NARUMI Yasuo, HOSOKOSHI Yuko, KATOH Keiichi, INOUE Katsuya, GOTO Tsuneaki
Physica B 346-347, 34-37,(2004)
- 15) Field-Induced Order in Anisotropic Haldane Spin Chain
SAKAI Toru
Physica B 345, 128-131,(2004)

2. Proceedings

- 1) Water-induced and Co-filling control induced ferromagnetism in $\text{Rb}_2\text{Ni}_3\text{S}_4$
K. Hondou, M. Usuda, K. Ito

- Ceramics-Silikaty 49, 1-6 ,(2005)
- 2) Finite Temperature Simulation Based on Lanczos Algorithm for Low-Dimensional Quantum Systems
SAKAI Toru
Computer Simulation Studies in Condensed Matter Physics XVI, edited by D. P. Landau, S. P. Lewis, H. -B. Shuttler (Springer, Berlin) p. 47-60,(2004)

Synchrotron radiation simulation research (Simulation Group for Materials Science)

1. Journals

- 1) Bandgaps of $\text{Ga}_{1-x}\text{In}_x\text{N}$ by all-electron GWA calculation
USUDA Manabu, HAMADA Noriaki, SHIRAIISHI Kenji, OSHIYAMA Atsushi
Physica Status Solidi (C), 0,7,2733-2736,(2003/12)
- 2) Cooperative Jahn-Teller effect on the X-ray diffraction spectra in DyB_2C_2
NAGAO Tatsuya, IGARASHI Junichi
Physica B; Condensed Matter, 345,1-4,70-73,(2004/03)
- 3) Lattice distortion and resonant X-ray scattering in DyB_2C_2
IGARASHI Junichi, NAGAO Tatsuya
Journal of the Physical Society of Japan, 72,5,1279-1286,(2003/05)
- 4) X-ray magnetic circular dichroism at the K edge of Mn_3GaC
TAKAHASHI Manabu, IGARASHI Junichi
Physical Review B, 67,24,245104_1-245104_5,(2003/06)
- 5) Interference between thomson scattering and resonant scattering in X-Ray diffraction from CeB_6
NAGAO Tatsuya, IGARASHI Junichi
Journal of the Physical Society of Japan, 72,9,2381-2384,(2003/09)
- 6) *Ab-Initio* calculation of magnetic resonant X-ray scattering spectra in NiO
USUDA Manabu, TAKAHASHI Manabu, IGARASHI Junichi
Physical Review B, 69,1,014408_1-014408_7,(2004/01)
- 7) Band structures of Wurtzite InN and $\text{Ga}_{1-x}\text{In}_x\text{N}$ by all-electron GW calculation
USUDA Manabu, HAMADA Noriaki, SHIRAIISHI Kenji, OSHIYAMA Atsushi
Japanese Journal of Applied Physics, Part 2, 43,3B,L407-L410,(2004/03)
- 8) Magnetic resonant x-ray scattering at the Ga K edge in UGa_3 : A band theoretical approach,
M. USUDA, J. IGARASHI and A. KODAMA,
Phys. Rev. B **69**, 224402(1-5), 2004.
- 9) Higher Order Perturbation Expansion for Pairing Interaction in Repulsive Hubbard Model,
T. NOMURA and K. YAMADA,
J. Phys. Soc. Jpn. **72**, 2053-2063, 2003.
- 10) Theory of Superconductivity in Strongly Correlated Electron Systems,
Y. YANASE, T. JUJO, T. NOMURA, H. IKEDA, T. HOTTA AND K. YAMADA,
Phys. Reports **387**, 1-149, 2003.
- 11) Possibility of f-Wave Spin-Triplet Superconductivity in the CoO_2 Superconductor: A Case Study on a
2D Triangular Lattice in the Repulsive Hubbard Model,
H. IKEDA, Y. NISIKAWA and K. YAMADA
J. Phys. Soc. Jpn. **73**, 17-20, 2004.

2. Proceedings

- 1) Resonant X-ray scattering in KCuF_3
TAKAHASHI Manabu, IGARASHI Junichi
Physica B; Condensed Matter, 329-333,Part2,870-871,(2003/05)
- 2) Mechanism of resonant X-ray scattering in DyB_2C_2
NAGAO Tatsuya, IGARASHI Junichi
Physica B; Condensed Matter, 329-333,Part2,628-630,(2003/05)
- 3) Magnetic resonant X-ray scattering in RbMnF_3 : an ab initio study
Manabu USUDA, Manabu TAKAHASHI and Jun-ichi IGARASHI
Physica B, **345**, 30-33, 2004.
- 4) Ab initio study of magnetic nonresonant and resonant X-ray scattering in KCuF_3 ,
Manabu TAKAHASHI, Manabu USUDA and Jun-ichi IGARASHI
Physica B, **345**, 26-29, 2004.
- 5) Cooperative Jahn-Teller effect on the X-ray diffraction spectra in DyB_2C_2 ,
T. NAGAO and Jun-ichi IGARASHI
Physica B, **345**, 70-73, 2004.

2002

Synchrotron radiation simulation research (Simulation Group for Materials Science)

1. Journals

- 1) Lattice distortion and V K-edge resonant X-ray scattering in YVO_3
Takahashi Manabu , Igarashi Junichi
Physical Review B,65,20,205114_1-205114_7,(2002/05)
- 2) Resonant X-ray scattering from CeB_6
Igarashi Junichi , Nagao Tatsuya
Journal of the Physical Society of Japan,71,7,1771-1779,(2002/07)
- 3) All-electron GW calculation based on the LAPW method : Application to wurtzite ZnO
Usuda Manabu , Hamada Noriaki , Kotani Takao , Mark Van Schilfgarde
Physical Review B,66,12,125101_1-125101_8,(2002/09)
- 4) Magnetic resonant X-ray scattering in $KCuF_3$
Takahashi Manabu , Usuda Manabu , Igarashi Junichi
Physical Review B,67,6,064425_1-064425_7,(2003/02)

2. Proceedings

- 1) Resonant X-ray scattering in $YTiO_3$ and YVO_3
Takahashi Manabu , Igarashi Junichi
Surface Review and Letters,9,2,1197-1201,(2002/04)
- 2) 5d states and resonant X-ray scattering from CeB_6
Nagao Tatsuya , Igarashi Junichi
Surface Review and Letters,9,2,1203-1207,(2002/04)

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Synchrotron radiation simulation research (Simulation Group for Materials Science)

1. Proceedings

- 1) Theory of Field-Induced Gap Formation in Charge-Ordered Yb_4As_3
H. Shiba, K. Ueda, O. Sakai and S. -J. Qin
Physica B 312-313, 309, 2002.
- 2) Structure, Effective Hamiltonian and Magnetic Excitation Spectrum in Charge-Ordered Yb_4As_3
H. Shiba, K. Ueda, O. Sakai and S. -J. Qin
Proceeding of French-Japanese Symposium on Quantum Properties of Low-Dimensional Antiferromagnets, p.183, 2002