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Resonant inelastic x-ray scattering studies of elementary excitations

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PUBLICATIONS

1. L. J. P. Ament, G. Khaliullin, and J. van den Brink, *Resonant Inelastic X-ray Scattering on Spin-Orbit Coupled Insulating Iridates*, arxiv:1008.4862 (2010) [Chapter 6].
2. H. Yavaş, M. van Veenendaal, J. van den Brink, L. J. P. Ament, A. Alatas, B. M. Leu, M.-O. Apostu, N. Wizen, G. Behr, W. Sturhahn, H. Sinn, and E. E. Alp, *Observation of phonons with resonant inelastic x-ray scattering*, arXiv:1009.4356 (2010) [Chapter 7].
3. L. J. P. Ament, M. van Veenendaal, T. P. Devereaux, J. P. Hill, and J. van den Brink, *Resonant Inelastic X-ray Scattering Studies of Elementary Excitations*, arXiv:1009.3630 (2010), submitted to Rev. Mod. Phys.
4. L. Braicovich, M. Moretti Sala, L. J. P. Ament, V. Bisogni, M. Minola, G. Balestrino, D. Di Castro, G. M. De Luca, M. Salluzzo, G. Ghiringhelli, and J. van den Brink, *Momentum and polarization dependence of single-magnon spectral weight for Cu L_3 -edge resonant inelastic x-ray scattering from layered cuprates*, Phys. Rev. B **81**, 174533 (2010) [Chapter 4].
5. M. Guarise, B. Dalla Piazza, M. Moretti Sala, G. Ghiringhelli, L. Braicovich, H. Berger, J. N. Hancock, D. van der Marel, T. Schmitt, V. N. Strocov, L. J. P. Ament, J. van den Brink, P.-H. Lin, P. Xu, H. M. Rønnow, M. Griioni, *High-energy magnon dispersion demonstrates extended interactions in undoped cuprates*, arXiv:1004.2441, Phys. Rev. Lett., in press [Chapter 4].
6. L. J. P. Ament, J. van den Brink, *Strong Three-magnon Scattering in Cuprates by Resonant X-rays*, arXiv:1002.3773 (2010).
7. L. Braicovich, J. van den Brink, V. Bisogni, M. Moretti Sala, L. J. P. Ament, N. B. Brookes, G. M. De Luca, M. Salluzzo, T. Schmitt, and G. Ghiringhelli, *Magnetic Excitations and Phase Separation in the Underdoped $La_{2-x}Sr_xCuO_4$ Superconductor Measured by Resonant Inelastic X-Ray Scattering*, Phys. Rev. Lett. **104**, 077002 (2010) [Chapter 4].
8. L. J. P. Ament and G. Khaliullin, *Theory of Raman and Resonant Inelastic X-ray Scattering from Collective Orbital Excitations in $YTiO_3$* , Phys. Rev. B **81**, 125118 (2010) [Chapter 5].

9. L. J. P. Ament, G. Ghiringhelli, M. Moretti Sala, L. Braicovich, and J. van den Brink, *Theoretical Demonstration of How the Dispersion of Magnetic Excitations in Cuprate Compounds can be Determined Using Resonant Inelastic X-Ray Scattering*, Phys. Rev. Lett. **103**, 117003 (2009) [Chapter 4].
10. C. Ulrich, L. J. P. Ament, G. Ghiringhelli, L. Braicovich, M. Moretti Sala, N. Pezzotta, T. Schmitt, G. Khaliullin, J. van den Brink, H. Roth, T. Lorenz, and B. Keimer, *Momentum Dependence of Orbital Excitations in Mott-Insulating Titanates*, Phys. Rev. Lett. **103**, 107205 (2009) [Chapter 5].
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12. L. Braicovich, L. J. P. Ament, V. Bisogni, F. Forte, C. Aruta, G. Balestrino, N. B. Brookes, G. M. De Luca, P. G. Medaglia, F. Miletto Granozio, M. Radovic, M. Salluzzo, J. van den Brink, and G. Ghiringhelli, *Dispersion of Magnetic Excitations in the Cuprate La_2CuO_4 and CaCuO_2 Compounds Measured Using Resonant X-Ray Scattering*, Phys. Rev. Lett. **102**, 167401 (2009) [Chapter 4].
13. F. Forte, L. J. P. Ament, and J. van den Brink, *Single and double orbital excitations probed by resonant inelastic x-ray scattering*, Phys. Rev. Lett. **101**, 106406 (2008) [Chapter 5].
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15. F. Forte, L. J. P. Ament, and J. van den Brink, *Magnetic excitations in La_2CuO_4 probed by indirect resonant inelastic x-ray scattering*, Phys. Rev. B **77**, 134428 (2008) [Chapter 4].
16. L. J. P. Ament, F. Forte, and J. van den Brink, *Ultrashort Lifetime Expansion for Indirect Resonant Inelastic X-ray Scattering*, Phys. Rev. B **75**, 115118 (2007) [Chapter 3].
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Personalialia

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Education

- 2006 – 2010 **Ph.D. in theoretical physics** at the Institute-Lorentz, Leiden University
- Thesis advisor: Prof. Dr. J. van den Brink
 - Worked, a.o., in Stuttgart, KITP Santa Barbara, Argonne National Laboratory and Stanford
 - Presented research abroad on 15 occasions
 - Co-organized the Cambridge-Leiden workshop on quantum matter in May 2009
 - Teaching assistant for the courses Quantum Theory and Quantum Field Theory
- 2001 – 2006 **Doctoraal in physics** (MSc), Leiden University
- Graduated cum laude
 - Thesis advisor: Prof. Dr. C. W. J. Beenakker
- 1995 – 2001 **VWO** at Christelijk College Schaersvoorde, Aalten

Employment

- 2002 – 2006 **Teaching assistant** at Stichting Studiebegeleiding Leiden
- Subjects: mathematics, physics, economics

Prizes

- 2008 Third prize in the postercompetition at ‘Physics@FOM 2008’
- 300 contestants
- 2003 Winner of PION '03 (national physics olympiad for students)
- In a team with 3 fellow students

