Bibliography

[1] E. Adam, L. Billard, and F. Lançon, *Class of Monte Carlo algorithms for dynamic problems leads to an adaptive method*, Phys. Rev. E **59** (1999), 1212.

[2] R. Allenspach, *Ultrathin films: magnetism on the microscopic scale*, J. Magn. Magn. Mater. **129** (1994), 160.

[3] R. Allenspach, M. Stampanoni, and A. Bischof, *Magnetic domains in thin epitaxial Co/Au(111) films*, Phys. Rev. Lett. **65** (1990), 3344.

[4] J. G. Amar, F. Family, and P.-M. Lam, *Dynamic scaling of the island-size distribution and percolation in a model of submonolayer molecular-beam epitaxy* , Phys. Rev. B **50** (1994), 8781.

[5] J.-O. Andersson, C. Djurberg, T. Jonsson, P. Svedlindh, and P. Nordblad, *Monte Carlo studies of the dynamics of an interacting monodispersive magnetic-particle system*, Phys. Rev. B **56** (1997), 13983.

[6] B. Barbara, L. Thomas, F. Lionti, I. Chiorescu, and A. Sulpice, *Macroscopic quantum tunneling in molecular magnets*, J. Magn. Magn. Mater. **200** (1999), 167.

[7] G. T. Barkema and M. E. J. Newman, *New Monte Carlo algorithms for classical spin systems*, Monte Carlo Methods in Chemical Physics (D. Ferguson, J. I. Siepman, and D. G. Truhlar, eds.), Wiley, New York, 1997.

[8] E. Bauer, Z. Kristallogr. **110** (1958), 372.

[9] H. N. Bertram, *Monte Carlo calculation of magnetic anhysteresis*, J. Phys. (Paris) **32** (1971), no. 2-3 Colloque C1, 684.

[10] K. Binder, *Monte Carlo Methods in Statistical Physics*, Topics in Current Physics, no. 7, Springer-Verlag, Berlin, 1979.

[11] ———, *Spin glasses: Experimental facts, theoretical concepts, and open questions*, Rev. Mod. Phys. **58** (1986), 801.

[12] ———, *Applications of MC methods to statistical physics*, Rep. Prog. Phys. **60** (1997), 487 – 559.

[13] K. Binder and D. W. Heermann, *Monte Carlo Simulation in Statistical Physics, An Introduction*, second corrected ed., Solid-State Sciences, no. 80, Springer-Verlag, Berlin, 1992.

[14] C. Binns, S. H. Baker, M. J. Maher, S. Louch, S. C. Thornton, K. W. Edmonds, S. S. Dhesi, and N. B. Brookes, *Magnetism in Fe nanoclusters – from isolated particles to nanostructured materials*, phys. stat. sol. (a) **189** (2002), 339.

[15] J. A. C. Bland and B. Heinrich (eds.), *Ultrathin Magnetic Structures I + II*, Springer, Berlin, 1994.

[16] A. B. Bortz, M. H. Kalos, and J. L. Lebowitz, *A new algorithm for Monte Carlo simulation of Ising spin systems*, J. Comp. Phys. **17** (1975), 10.

[17] U. Bovensiepen, P. Poulopoulos, W. Platow, M. Farle, and K. Baberschke, *Sudden jump of the Curie temperature at the coalescence of Co islands on Cu(001)*, J. Magn. Magn. Mater. **192** (1999), L386.

[18] A. M. Bowler and E. S. Hood, *Time-dependent Monte Carlo studies of surface diffusion*, J. Chem. Phys. **94** (1991), 5162.

[19] K. Bromann, C. Félix, H. Brune, W. Harbich, R. Monot, J. Buttet, and K. Kern, *Controlled deposition of size-selected silver nanoclusters*, Science **274** (1996), 956.

[20] W. F. Brown, *Relaxational Behavior of Fine Magnetic Particles*, J. Appl. Phys. **30** (1959), 130S.

[21] ———, *Thermal fluctuations of a single-domain particle*, Phys. Rev. **130** (1963), 1677.

[22] H. Brune, M. Giovannini, K. Bromann, and K. Kern, *Self-organized growth of nanostructure arrays on strain relief patterns*, Nature **394** (1998), 451.

[23] P. Bruno, *Physical origins and theoretical models of magnetic anisotropy*, Magnetismus von Festkörpern und Grenzflächen, 24. IFF-Ferienkurs, Forschungszentrum Jülich GmbH, 1993, pp. 24.1 – 24.28.

[24] ———, *Geometrically constrained magnetic wall*, Phys. Rev. Lett. **83** (1999), 2425.

[25] P. Bruschi, P. Cagnoni, and A. Nannini, *Temperature-dependent Monte Carlo simulations of thin metal film growth and percolation*, Phys. Rev. B **55** (1997), 7955.

[26] R. W. Chantrell, A. Lyberatos, and E. P. Wohlfarth, *Anhysteretic properties of interacting magnetic tape particles*, J. Appl. Phys. **55** (1984), 2223.

[27] D. Chowdhury and B. Biswal, *Interfacial dynamics in disordered magnets: Relaxation, critical dynamics and domain growth*, Annual Reviews of Computational Physics (Singapore) (D. Stauffer, ed.), vol. I, World Scientific, 1994, pp. 55–105.

[28] O. Chubykalo, U. Nowak, R. Smirnov-Rueda, M. A. Wongsam, R. W. Chantrell, and J. M. Gonzalez, *Monte Carlo technique with a quantified time step: Application to the motion of magnetic moments*, Phys. Rev. B **67** (2003), 064422.

[29] S. Clarke, M. R. Wilby, and D. D. Vvedensky, *Theory of homoepitaxy on Si(001)*, Surf. Sci. **255** (1991), 91.

[30] W. T. Coffey, D. S. F. Crothers, J. L. Dorman, Yu. P. Kalmikov, E. C. Kennedy, and W. Wernsdorfer, *Thermally activated relaxation time of a single domain ferromagnetic particle subjected to a uniform field at an oblique angle to the easy axis: Comparison with experimental observations*, Phys. Rev. Lett. **80** (1998), 5655.

[31] R. P. Cowburn, A. O. Adeyeye, and M. E. Welland, *Controlling magnetic ordering in coupled nanomagnet arrays*, New J. Phys. **1** (1999), 16.1.

[32] R. P. Cowburn, D. K. Koltsov, A. O. Adeyeye, M. E. Welland, and D. M. Tricker, *Single-domain circular nanomagnets*, Phys. Rev. Lett. **83** (1999), 1042.

[33] S. T. Coyle, G. G. Hembree, and M. R. Scheinfein, *Growth, morphology, and magnetic properties of ultrathin epitaxial Co films on Cu(100)*, J. Vac. Sci. Technol. A **15** (1997), 1785.

[34] R. Czech and J. Villain, *Instability of two-dimensional Ising ferromagnets with dipole interactions*, J. Phys.: Condens Matter **1** (1989), 619.

[35] S. W. Davis, W. McCausland, H. C. McGahagan, and M. Widom, *Cluster-based Monte Carlo simulation of ferrofluids*, Phys. Rev. E **59** (1999), 2424.

[36] J. J. de Miguel, A. Cebollada, J. M. Gallego, S. Ferrer, R. Miranda, C. M. Schneider, P. Bressler, J. Garbe, K. Bethge, and J. Kirschner, *Characterization of the growth processes and magnetic properties of thin ferromagnetic Cobalt films on Cu(100)*, Surf. Sci. **211/212** (1989), 732.

[37] K. De'Bell, A. B. MacIsaac, I. N. Booth, and J. P. Whitehead, *Dipolar-induced planar anisotropy in ultrathin magnetic films*, Phys. Rev. B **55** (1997), 15108.

[38] K. De'Bell, A. B. MacIsaac, and J. P. Whitehead, *Dipolar effects in magnetic thin films and quasi-two-dimensional systems*, Rev. Mod. Phys. **72** (2000), 225.

[39] S. I. Denisov, T. V. Lyutyy, and K. N. Trohidou, *Magnetic relaxation in finite two-dimensional nanoparticle ensembles*, Phys. Rev. B **67** (2003), 014411.

[40] C. Djurberg, P. Svedlindh, P. Nordblad, M. F. Hansen, F. Bødker, and S. Mørup, *Dynamics of an interacting particle system: evidence of critical slowing down*, Phys. Rev. Lett. **79** (1997), 5154.

[41] J. L. Dormann, D. Fiorani, and E. Tronc, *On the models for interparticle interactions in nanoparticle assemblies: comparison with experimental results*, J. Magn. Magn. Mater. **202** (1999), 251.

[42] M. Dreyer, M. Kleiber, A. Wadas, and R. Wiesendanger, *Composition-driven change of the magnetic anisotropy of ultrathin Co/Au(111) films studied by means of magnetic-force microscopy in ultrahigh vacuum*, Phys. Rev. B **59** (1999), 4273.

[43] M. Eden, Proceedings of the Fourth Berkeley Symposium on Mathematical Statistics and Probabilities (Berkeley) (F. Neyman, ed.), vol. IV, University of California Press, 1961, p. 233.

[44] G. Ehrlich and F. G. Hudda, , J. Chem. Phys. **44** (1966), 1039.

[45] D. M. Eigler and E. K. Schweizer, *Positioning single atoms with a scanning tunneling microscope*, Nature **344** (1990), 524.

[46] J. W. Evans and M. C. Bartelt, *Submonolayer nucleation and growth of 2D islands and multilayer mound formation during homoepitaxy*, Morphological Organization in Epitaxial Growth and Removal (Z. Zhang and M. G. Lagally, eds.), World Scientific, Singapore, 1998, pp. 50–72.

[47] G. Fahsold, *Inelastische Streuung spinpolarisierter Elektronen an ultradünnen Cr- und Co-Filmen auf Cu(100)*, Ph.D. thesis, Freie Universität Berlin, 1994.

[48] J. Fassbender, R. Allenspach, and U. Dörig, *Intermixing and growth kinetics of the first Co monolayers on Cu(001)*, Surf. Sci. **383** (1997), L742.

[49] R. P. Feynman, *There's plenty of room at the bottom*, Engineering and Science (Feb. 1960), p. 22, available at: http://www.zyvex.com/nanotech/feynman.html.

[50] K. A. Fichthorn and W. H. Weinberg, *Theoretical foundations of dynamical Monte Carlo simulations*, J. Chem. Phys. **95** (1991), 1090.

[51] A. J. Freeman and R. Fu, *Electronic structure theory of surface, interface and thin film magnetism*, J. Magn. Magn. Mater. **100** (1991), 497.

[52] N. García, V.V. Osipov, E. V. Ponizovskaya, and A. del Moral, *Chaotic domain patterns in periodic inhomogeneous magnetic films*, Phys. Rev. Lett. **86** (2001), 4926.

[53] J. García-Otero, M. Porto, J. Rivas, and A. Bunde, *Influence of dipolar interaction on magnetic properties of ultrafine ferromagnetic particles*, Phys. Rev. Lett. **84** (2000), 167.

[54] T. Garel and S. Doniach, *Phase transitions with spontaneous modulation – the dipolar Ising ferromagnet*, Phys. Rev. B **26** (1982), 325.

[55] M. Giersig and M. Hilgendorff, *The preparation of ordered colloidal magnetic particles by magnetophoretic deposition*, J. Phys. D **32** (1999), L111.

[56] M. H. Grabow and G. H. Gilmer, *Thin film growth modes, wetting and cluster nucleation*, Surf. Sci. **194** (1988), 333.

[57] M. F. Hansen and S. Mørup, *Models for the dynamics of interacting magnetic particles*, J. Magn. Magn. Mater. **184** (1998), 262.

[58] J. Hauschild, H. J. Elmers, and U. Gradmann, *Dipolar superferromagnetism in monolayer nanostripes of Fe(110) on vicinal W(110) surfaces*, Phys. Rev. B **57** (1998), R677.

[59] D. W. Heermann, *Computer Simulation Methods*, 2nd ed., Springer, Berlin, 1990.

[60] B. Heinrich, J. F. Cochran, M. Kowalewski, J. Kirschner, Z. Celinski, A. S. Arrot, and K. Myrtle, *Magnetic anisotropies and exchange coupling in ultrathin fcc Co(001) structures*, Phys. Rev. B **44** (1991), 9348.

[61] W. Heisenberg, *Zur Theorie des Ferromagnetismus*, Z. Phys. **49** (1928), 619.

[62] M. El Hilo, K. O. O'Grady, and R. W. Chantrell, *The effect of interactions on GMR in granular solids*, J. Appl. Phys. **76** (1994), 6811.

[63] F. J. Himpsel, J. E. Ortega, G. J. Mankey, and R. F. Willis, *Magnetic nanostructures*, Adv. Phys. **47** (1998), 511.

[64] D. Hinzke, *Computersimulationen zur Dynamik magnetischer Nanostrukturen*, Ph.D. thesis, Gerhard-Mercator-Universität Duisburg, 2002.

[65] D. Hinzke and U. Nowak, *Magnetic relaxation in a classical spin chain*, Phys. Rev. B **61** (2000), 6734.

[66] ———, *Simulation of magnetization switching in nanoparticle systems*, Phys. Stat. Sol. **189** (2002), 475.

[67] S. Hope, M. Tselepi, E. Gu, T. M. Parker, and J. A. C. Bland, *Two-dimensional percolation phase transition in ultrathin Co/Cu(110)*, J. Appl. Phys. **85** (1999), 6094.

[68] J. Hoshen and R. Kopelman, *Percolation and cluster distribution. I. Cluster multiple labeling technique and critical concentration algorithm*, Phys. Rev. B **14** (1976), 3438.

[69] A. Hubert and R. Schäfer, *Magnetic Domains*, Springer, Berlin, 1998.

[70] A. Hucht and K. D. Usadel, *Characterization of the reorientation transition in classical Heisenberg models with dipole interaction*, J. Magn. Magn. Mater. **156** (1996), 423.

[71] Institut für Festkörperforschung der Forschungszentrum Jülich GmbH (ed.), *30. IFF-Ferienschule, Magnetische Schichtsysteme*, Vorlesungsmanuskripte, Forschungszentrum Jülich, 1999.

[72] H. J. F. Jansen, *Magnetic anisotropy in density-functional theory*, Phys. Rev. B **38** (1988), 8022.

[73] R. Jansen, M. Speckmann, H. P. Oepen, and H. van Kempen, *Morphology and magnetism of thin Co films on textured Au surfaces*, J. Magn. Magn. Mater. **165** (1997), 258.

[74] C. Jayaprakash, E. K. Riedel, and M. Wortis, *Critical and thermodynamic properies of the randomly dilute Ising model*, Phys. Rev. B **18** (1978), 2244.

[75] P. J. Jensen, *Magnetische Eigenschaften dünner ferromagnetischer Filme*, Habilitationsschrift, Freie Universität Berlin, 1994.

[76] ———, *Rapid evaluation of oscillating lattice sums*, Ann. Physik **6** (1997), 317.

[77] P. J. Jensen and K. H. Bennemann, *Theoretical study of the temperature dependence of the width of magnetic domain walls*, Ann. Physik **2** (1993), 475.

[78] ———, *Theory for the magnetic phase diagram of thin films: Role of domain formation*, Phys. Rev. B **52** (1995), 16012.

[79] P. J. Jensen and G. M. Pastor, (accepted by New. J. Phys., 2003).

[80] ———, *Dipole coupling induced magnetic ordering in an ensemble of nanostructured islands*, Phys. Stat. Sol. (a) **189** (2002), 527.

[81] T. Jonsson, P. Svedlindh, and M. F. Hansen, *Static scaling on an interacting magnetic nanoparticle system*, Phys. Rev. Lett. **81** (1998), 3976.

[82] R. Jullien and R. Botet, *Surface thickness in the Eden model*, Phys. Rev. Lett. **54** (1985), 2055.

[83] D. Kandel and E. Kaxiras, *Surfactant mediated crystal growth of semiconductors*, Phys. Rev. Lett. **75** (1995), 2742.

[84] H. C. Kang and W. H. Weinberg, *Dynamic Monte Carlo with a proper energy barrier: Surface diffusion and two-dimensional domain ordering*, J. Chem. Phys. **90** (1989), 2824.

[85] B. Kaplan and G. A. Gehring, *The domain structure in ultrathin magnetic films*, J. Magn. Magn. Mater. **128** (1993), 111.

[86] D. Kechrakos and K. N. Trohidou, *Magnetic properties of dipolar interacting single-domain particles*, Phys. Rev. B **58** (1998), 12169.

[87] M. T. Kief, G. J. Mankey, and R. F. Willis, *Micromagnetic properties of ultrathin cobalt films*, J. Appl. Phys **69** (1991), 5000.

[88] R. D. Kirby, J. X. Shen, R. J. Hardy, and D. J. Sellmyer, *Magnetization reversal in nanoscale magnetic films with perpendicular anisotropy*, Phys. Rev. B **49** (1994), 10810.

[89] C. Kittel, *Theory of the structure of ferromagnetic domains in films and small particles*, Phys. Rev. **70** (1946), 965.

[90] M. Kotrla, J. Krug, and P. Šmilauer, *Submonolayer epitaxy with impurities: Kinetic Monte Carlo simulations and rate equations analysis*, Phys. Rev. B **62** (2000), 2889.

[91] P. Krams, F. Lauks, R. L. Stamps, B. Hillebrands, and G. Güntherodt, *Magnetic anisotropies of ultrathin Co(001) films on Cu(001)*, Phys. Rev. Lett. **69** (1992), 3674.

[92] D. P. Landau and K. Binder, *A Guide to Monte Carlo Simulations in Statistical Physics*, Cambridge University Press, Cambridge, 2000.

[93] L. Landau and E. Lifshitz, , Physik. Z. Sowjetunion **8** (1935), 153.

[94] A. C. Levi and M. Kotrla, *Theory and simulation of crystal growth*, J. Phys.: Cond. Matt. **9** (1997), 299.

[95] H. Li and B. P. Tonner, *Structure and growth mode of metastable fcc cobalt ultrathin films on Cu(001) as determined by angle-resolved X-ray photoemission scattering*, Surf. Sci. **237** (1990), 141.

[96] S. Liang, *Application of cluster algorithms to spin glasses*, Phys. Rev. Lett. **69** (1992), 2145.

[97] D. K. Lottis and R. M. White, *Model system for slow dynamics*, Phys. Rev. Lett. **67** (1991), 362.

[98] R. M. Lynden-Bell, *Computer simulation of atomic dynamics on metal surfaces* , The Chemical Physics of Solid Surfaces (D. A. King and D. P. Woodruff, eds.), vol. 7, Elsevier Science, Amsterdam, 1994, pp. 409–442.

[99] P. A. Maksym, *Fast Monte Carlo simulation of MBE growth*, Semicond. Sci. Technol. **3** (1988), 594.

[100] H. Mamiya, I. Nakatani, and T. Furubayashi, *Blocking and freezing of magnetic moments for iron nitride fine particle systems*, Phys. Rev. Lett. **80** (1998), 177.

[101] M. Mansuripur, *Magnetization reversal, coercivity, and the process of thermomagnetic recording in thin films of amorphous rare earth-transition metal alloys*, J. Appl. Phys. **61** (1987), 1580.

[102] I. K. Marmorkos and S. Das Sarma, *Kinetic simulation of molecular beam epitaxial growth dynamics*, Surf. Sci. **237** (1990), L411.

[103] J. Merikowski, I. Vattulainen, J. Heinonen, and T. Ala-Nissila, *Effect of kinks and concerted diffusion mechanisms on mass transport and growth on stepped metal surfaces*, Surf. Sci. **387** (1997), 167.

[104] N. D. Mermin and H. Wagner, *Absence of ferromagnetism or antiferromagnetism in one- or two-Dimensional isotropic Heisenberg models*, Phys. Rev. Lett. **17** (1966), 1133.

[105] M. Methfessel, D. Hennig, and M. Scheffler, *Calculated surface energies of the 4d transition metals: A study of bond-cutting models*, Appl. Phys. A **55** (1992), 442.

[106] N. Metropolis, A. W. Rosenbluth, M. N. Rosenbluth, A. M. Teller, and E. Teller, , J. Chem. Phys. **21** (1953), 1087.

[107] A. R. Miedema, Z. Metallkde. **69** (1978), 287.

[108] A. R. Miedema and F. J. A. den Broeder, Z. Metallkde. **70** (1979), 14.

[109] Y. Millev and M. Fähnle, *Temperature dependence of magnetic anisotropy and magnetostriction*, Phys. Rev. B **51** (1995), 2937.

[110] A. H. Morrish, *The Physical Principles of Magnetism*, John Wiley & Sons, Inc., New York, 1966.

[111] A. Moschel, R. A. Hyman, A. Zangwill, and M. D. Stiles, *Magnetization reversal in ultrathin films with monolayer-scale surface roughness*, Phys. Rev. Lett. **77** (1996), 3653.

[112] L. Néel, *Théorie du Trainage Magnétique des Ferromagnétique en Grains Fins avec Applications aux Terres Cuites*, Ann. Géophys. **5** (1949), 99.

[113] ———, *Surface magnetic anisotropy and orientational superstructures*, J. Phys. Rad. **15** (1954), 225.

[114] F. Nouvertné, U. May, M. Bamming, A. Rampe, U. Korte, G. Güntherodt, R. Pentcheva, and M. Scheffler, *Atomic exchange processes and bimodal initial growth of Co/Cu(001)*, Phys. Rev. B **60** (1999), 14382.

[115] U. Nowak, *Magnetization reversal and domain structure in thin magnetic films: Theory and computer simulation*, IEEE Trans. Mag. **31** (1995), 4169.

[116] ———, *Thermally activated reversal in magnetic nanostructures*, Annual Reviews of Computational Physics (Singapore) (D. Stauffer, ed.), vol. IX, World Scientific, 2001, pp. 105–152.

[117] U. Nowak, R. W. Chantrell, and E. C. Kennedy, *Monte Carlo simulation with time step quantification in terms of Langevin dynamics*, Phys. Rev. Lett. **84** (2000), 163.

[118] U. Nowak, U. Rüdiger, P. Fumagalli, and G. Güntherodt, *Dependence of magnetization reversal on the crystallite size in MnBi thin films: Experiment, theory, and computer simulation*, Phys. Rev. B **54** (1996), 13017.

[119] H. P. Oepen, M. Speckmann, Y. Millev, and J. Kirschner, *Unified approach to thickness-driven magnetic reorientation transitions*, Phys. Rev. B **55** (1997), 2752.

[120] J. H. Oh and D. I. Choi, *Monte Carlo study of the domain kinetics of the Ising model with random coupling constants*, Phys. Rev. B **33** (1986), 3448.

[121] S. Padovani, I. Chado, F. Scheurer, and J. P. Bucher, *Transition from zero-dimensional superparamagnetism to two-dimensional ferromagnetism of Co clusters on Au(111)*, Phys. Rev. B **59** (1999), 11887.

[122] S. Padovani, P Molinàs-Mata, F. Scheurer, and J. P. Bucher, *Variable temperature STM and Kerr studies of ultrathin films of Co on Au(111): from self-organized clusters to continuous films*, Appl. Phys. A **66** (1998), S1199.

[123] G. M. Pastor, J. Dorantes-Dávila, S. Pick, and H. Dreyssé, *Magnetic anisotropy of 3d transition-metal clusters*, Phys. Rev. Lett. **75** (1995), 326.

[124] W. B. Pearson, *A Handbook of Lattice Spacings and Structures of Metalls and Alloys*, vol. I+II, Pergamon, Oxford, 1967.

[125] R. Pentcheva, *Theory of adsorption, diffusion, and growth of Cobalt on Cu(001)*, Ph.D. thesis, Freie Universität Berlin, 2000.

[126] R. Pentcheva and M. Scheffler, *Stable and metastable structures of Co on Cu(001): An ab initio study*, Phys. Rev. B **61** (2000), 2211.

[127] ———, *Initial adsorption of Co on Cu(001): A first-principles investigation*, Phys. Rev. B **65** (2002), 155418.

[128] D. Pescia, G. Zampieri, M. Stampanoni, G. L. Bona, R. F. Willis, and F. Meier, *Ferromagnetism of thin epitaxial fcc Cobalt films on Cu(001) observed by spin-polarized photoemission*, Phys. Rev. Lett. **58** (1987), 933.

[129] O. Pietzsch, A. Kubetzka, M. Bode, and R. Wiesendanger, *Real-space observation of dipolar antiferromagnetism in magnetic nanowires by spin-polarized scanning tunneling spectroscopy*, Phys. Rev. Lett. **84** (2000), 5212.

[130] M. Plischke and Z. Rácz, *Dynamic scaling and the surface structure of Eden clusters*, Phys. Rev. A **32** (1985), 3825.

[131] P. Poddar, T. Telem-Shafir, T. Fried, and G. Markovich, *Dipolar interactions in two- and three-dimensional magnetic nanoparticle arrays*, Phys. Rev. B **66** (2002), 060403(R).

[132] J. Pommier, P. Meyer, G. Pénissard, J. Ferré, P. Bruno, and D. Renard, *Magnetization reversal in ultrathin ferromagnetic films with perpendicular anisotropy: domain observations*, Phys. Rev. Lett. **65** (1990), 2054.

[133] P. Poulopoulos, P. J. Jensen, A. Ney, J. Lindner, and K. Baberschke, *Metastable magnetic properties of Co/Cu(001) films below the T_c jump*, Phys. Rev. B **65** (2002), 064431.

[134] M. Pratzer, H. J. Elmers, M. Bode, O. Pietzsch, A. Kubetzka, and R. Wiesendanger, *Atomic-scale magnetic domain walls in quasi-one-dimensional fe nanostripes*, Phys. Rev. Lett. **87** (2001), 127201.

[135] W. H. Press, S. A. Teukolsky, W. T. Vetterling, and B. P. Flannery, *Numerical Recipes in Fortran 77*, Cambridge University Press, Cambridge, 1992.

[136] ———, *Numerical Recipes in Fortran 90*, Cambridge University Press, Cambridge, 1996.

[137] U. Ramsperger, A. Vaterlaus, P. Pfäffli, U. Maier, and D. Pescia, *Growth of Co on a stepped and on a flat Cu(001) surface*, Phys. Rev. B **53** (1996), 8001.

[138] C. Ratsch, P. Ruggerone, and M. Scheffler, *Study of strain and temperature dependence of metal epitaxy*, Morphological Organization in Epitaxial Growth and Removal (Z. Zhang and M. G. Lagally, eds.), World Scientific, Singapore, 1998, pp. 3–29.

[139] H. J. Richter, *Recent advances in the recording physics of thin-film media*, J. Phys. D: Appl. Phys. **32** (1999), R147.

[140] I. J. Robertson, V. Heine, and M. C. Payne, *Cohesion in Aluminum systems: A first-principles assessment of "glue" schemes*, Phys. Rev. Lett. **70** (1993), 1944.

[141] U. K. Rössler, *Ising dipoles on the triangular lattice*, J. Appl. Phys. **89** (2001), 7033.

[142] P. Ruggerone, C. Ratsch, and M. Scheffler, *Density-functional theory of epitaxial growth of metals*, The Chemical Physics of Solid Surfaces (D. A. King and D. P. Woodruff, eds.), vol. 8, Elsevier Science, Amsterdam, 1997, pp. 490–544.

[143] M. R. Scheinfein, K. E. Schmid, K. R. Heim, and G. G. Hembree, *Magnetic order in two-dimensional arrays of nanometer-sized superparamagnets*, Phys. Rev. Lett. **76** (1996), 1541.

[144] A. K. Schmid, *Growth of epitaxial Co thin films on Cu(001) studied by scanning tunneling microscopy*, Ph.D. thesis, Freie Universität Berlin, 1991.

[145] A. K. Schmid and J. Kirschner, *In situ observations of epitaxial growth of Co thin films on Cu(100)*, Ultramicroscopy **42-44** (1992), 483.

[146] J. Schnakenberg, *Algorithmen in der Quantentheorie und Statistischen Physik*, Verlag Zimmermann-Neufang, Ulmen, 1995.

[147] M. Schneider, A. Rahman, and I. K. Schuller, *Role of relaxation in epitaxial growth: A molecular dynamics study*, Phys. Rev. Lett. **55** (1985), 604.

[148] F. O. Schumann, M. E. Buckley, and J. A. C. Bland, *Paramagnetic-ferromagnetic phase transition during growth of ultrathin Co/Cu(001) films*, Phys. Rev. B **50** (1994), 16424.

[149] R. L. Schwoebel, , J. Appl. Phys. **40** (1969), 614.

[150] J. Shen, J. Giergiel, and J. Kirschner, *Growth and morphology of Ni/Cu(100) ultrathin films: An in situ study using scanning tunneling microscopy*, Phys. Rev. B **52** (1995), 8454.

[151] J. Shen, R. Skomski, M. Klaua, H. Jenniches, S. Sundar Manoharan, and J. Kirschner, *Magnetism in one dimension: Fe on cu(111)*, Phys. Rev. B **56** (1997), 2340.

[152] P. Šmilauer, M. R. Wilby, and D. D. Vvedensky, *Reentrant layer-by-layer growth: A numerical study*, Phys. Rev. B **47** (1993), 4119.

[153] C. M. Soukoulis, K. Levin, and G. S. Grest, *Irreversibility and metastability in spin-glasses. I. Ising model*, Phys. Rev. B **28** (1983), 1495.

[154] M. Speckmann, H. P. Oepen, and H. Ibach, *Magnetic domain structures in ultrathin Co/Au(111): on the influence of film morphology*, Phys. Rev. Lett. **75** (1995), 2035.

[155] P. Srivastava, F. Wilhelm, A. Ney, M. Farle, H. Wende, N. Haack, G. Ceballos, and K. Baberschke, *Magnetic moments and Curie temperatures of Ni and Co thin films and coupled trilayers*, Phys. Rev. B **58** (1998), 5701.

[156] D. Stauffer, *Introduction to Percolation Theory*, Taylor & Francis, London and Philadelphia, 1985.

[157] E. C. Stoner and E. P. Wohlfarth, *Interpretation of high coercivity in ferromagnetic materials*, Nature **160** (1947), 650.

[158] ———, *A mechanism of magnetic hysteresis in heterogeneous alloys*, Phil. Trans. Roy. Soc. (London) A **240** (1949), 599.

[159] R. Stumpf and M. Scheffler, *Ab initio calculations of energies and self-diffusion on flat and stepped surfaces of Al and their implications on crystall growth*, Phys. Rev. B **53** (1996), 4958.

[160] A. Sugawara and M. R. Scheinfein, *Room-temperature dipole ferromagnetism in linear-self-assembling mesoscopic Fe particle arrays*, Phys. Rev. B **56** (1997), R8499.

[161] S. Sun, C. B. Murray, D. Weller, L. Folks, and A. Moser, *Monodisperse FePt nanoparticles and ferromagnetic FePt nanocrystal superlattices*, Science **287** (2000), 198.

[162] R. H. Swendsen and J.-S. Wang, *Nonuniversal critical dynamics in Monte Carlo simulations*, Phys. Rev. Lett. **58** (1987), 86.

[163] M. Ulrich, J. García-Otero, and A. Bunde, *Slow relaxation in ferromagnetic nanoparticles: Indication of spin-glass behavior*, Phys. Rev. B **67** (2003), 024416.

[164] J. H. van Vleck, *The anisotropy of cubic ferromagnetic crystals*, Phys. Rev. **52** (1937), 1178.

[165] E. Y. Vedmedenko, H. P. Oepen, and J. Kirschner, *Magnetic microstructure of the spin reorientation transition*, J. Appl. Phys. **89** (2001), 7145.

[166] ———, *Microstructure of the spin reorientation transition in second-order approximation of magnetic anisotropy*, Phys. Rev. B **66** (2002), 214401.

[167] J. A. Venables, *Atomic processes in crystal growth*, Surf. Sci. **299/300** (1994), 798.

[168] J. A. Venables, G. D. T. Spiller, and M. Hanbücken, *Nucleation and growth of thin films*, Rep. Prog. Phys. **47** (1984), 399.

[169] M. Villarba and H. Jónsson, *Diffusion mechanisms relevant to metal crystal growth: Pt/Pt(111)*, Surf. Sci. **317** (1994), 15.

[170] B. Voigtländer, G. Meyer, and N. M. Amer, *Epitaxial growth of thin magnetic cobalt films on Au(111) studied by scanning tunneling microscopy*, Phys. Rev. B **44** (1991), 10354.

[171] A. F. Voter, *Classically exact overlayer dynamics: Diffusion of rhodium clusters on Rh(100)*, Phys. Rev. B **34** (1986), 6819.

[172] ———, *Atomistic simulation methods*, Morphological Organization in Epitaxial Growth and Removal (Z. Zhang and M. G. Lagally, eds.), World Scientific, Singapore, 1998, pp. 30–49.

[173] W. Wernsdorfer, E. Bonet Orozco, K. Hasselbach, A. Benoit, B. Barbara, N. Demoncy, A. Loiseau, H. Pascard, and D. Mailly, *Experimental evidence of the Néel-Brown model of magnetization reversal*, Phys. Rev. Lett. **78** (1997), 1791.

[174] V. Wildpaner, *Monte Carlo study of small magnetic particles*, Z. Physik **270** (1974), 215.

[175] U. Wolff, *Collective Monte Carlo updating for spin systems*, Phys. Rev. Lett. **62** (1989), 361.

[176] Y. Yafet and E. M. Gyorgy, *Ferromagnetic strip domains in an atomic monolayer*, Phys. Rev. B **38** (1988), 9145.

[177] Fumiko Yonezawa, Shoichi Sakamoto, and Motoo Hori, *Percolation in two-dimensional lattices. I. A technique for the estimation of thresholds*, Phys. Rev. B **40** (1989), 636.

[178] J. G. Zabolitzky and D. Stauffer, *Simulation of large Eden clusters*, Phys. Rev. A **34** (1986), 1523.

[179] P. Zeppenfeld and M. Hohage, *Nanostrukturierte Oberflächen*, Physikalische Blätter **56** (2000), no. 7, 33.

[180] G. Zinsmeister, Thin Solid Films **7** (1971), 51.