

The Einstein-like field theory and the renormalization of the shear modulus

Zapiski Nauchnykh Seminarov POMI, 2015, **433**, 196–203

References

- [1] H. Kleinert, *Gauge Fields in Condensed Matter*, V.I, II, World Scientific, Singapore, 1989 [Zentralblatt MATH](#) [ads*](#)
- [2] M. O. Katanaev, I. V. Volovich, “Theory of defects in solids and three-dimensional gravity”, *Ann. Phys.*, **216** (1992), 1–28 [crossref](#) [MathSciNet](#) [Zentralblatt MATH](#) [ads*](#)
- [3] M. O. Katanaev, “Geometric theory of defects”, *Physics-Uspekhi*, **48** (2005), 675–701 [Math-Net.Ru](#) [crossref](#) [ads*](#) [WEB OF SCIENCE™](#) [LIBRARY.RU](#)
- [4] G. de Berredo-Peixoto, M. O. Katanaev, “Tube dislocations in gravity”, *J. Math. Phys.*, **50** (2009), 042501 [crossref](#) [MathSciNet](#) [Zentralblatt MATH](#) [ads*](#) [WEB OF SCIENCE™](#) [LIBRARY.RU](#)
- [5] H. Kleinert, *Multivalued Fields in Condensed Matter, Electromagnetism, and Gravitation*, World Scientific, Singapore, 2008 [MathSciNet](#) [Zentralblatt MATH](#) [ads*](#)
- [6] C. Malyshev, “The $T(3)$ -gauge model, the Einstein-like gauge equation, and Volterra dislocations with modified asymptotics”, *Ann. Phys.*, **286** (2000), 249–277 [crossref](#) [MathSciNet](#) [Zentralblatt MATH](#) [ads*](#)
- [7] C. Malyshev, “The Einsteinian $T(3)$ -gauge approach and the stress tensor of the screw dislocation in the second order: avoiding the cut-off at the core”, *J. Phys. A: Math. Theor.*, **40** (2007), 10657–10684 [crossref](#) [MathSciNet](#) [Zentralblatt MATH](#) [ads*](#)
- [8] J. M. Kosterlitz, D. J. Thouless, “Ordering, metastability and phase transitions in two-dimensional systems”, *J. Phys. C: Solid State Phys.*, **6** (1973), 1181–1203 [crossref](#) [ads*](#)
- [9] A. Holz, J. T. N. Medeiros, “Melting transition of two-dimensional crystals”, *Phys. Rev. B*, **17** (1978), 1161–1174 [crossref](#) [ads*](#)
- [10] D. R. Nelson, “Study of melting in two dimensions”, *Phys. Rev. B*, **18** (1978), 2318–2338 [crossref](#) [ads*](#)
- [11] D. R. Nelson, B. I. Halperin, “Dislocation-mediated melting in two dimensions”, *Phys. Rev. B*, **19** (1979), 2457–2484 [crossref](#) [ads*](#)
- [12] A. P. Young, “Melting and vector Coulomb gas in two dimensions”, *Phys. Rev. B*, **19** (1979), 1855–1866 [crossref](#) [ads*](#)
- [13] S. Panyukov, Y. Rabin, “Statistical physics of interacting dislocation loops and their effect on the elastic moduli of isotropic solids”, *Phys. Rev. B*, **59** (1999), 13657–13671 [crossref](#) [ads*](#) [WEB OF SCIENCE™](#)
- [14] K. J. Strandburg, “Two-dimensional melting”, *Rev. Mod. Phys.*, **60** (1988), 161–207 [crossref](#) [ads*](#) [WEB OF SCIENCE™](#)
- [15] C. Malyshev, “Non-singular screw dislocations as the Coulomb gas with smoothed out coupling and the renormalization of the shear modulus”, *J. Phys. A: Math. Theor.*, **44** (2011), 285003 [crossref](#) [MathSciNet](#) [Zentralblatt MATH](#)
- [16] C. Malyshev, “Non-free gas of dipoles of non-singular screw dislocations and the shear modulus near the melting”, *Ann. Phys.*, **351** (2014), 22–34 [crossref](#) [MathSciNet](#) [ads*](#) [LIBRARY.RU](#)
- [17] D. S. Fisher, “Shear moduli and melting temperatures of two-dimensional electron crystals: low temperatures and high magnetic fields”, *Phys. Rev. B*, **26** (1982), 5009–5021 [crossref](#) [ads*](#) [WEB OF SCIENCE™](#)
- [18] P. Kalinay, L. Šamaj, “Thermodynamic properties of the two-dimensional Coulomb gas in the low-density limit”, *J. Stat. Phys.*, **106** (2002), 857–874 [crossref](#) [MathSciNet](#) [Zentralblatt MATH](#) [WEB OF SCIENCE™](#)

- [19] B. Jancovici, L. Šamaj, “Guest charge and potential fluctuations in two-dimensional classical Coulomb systems”, *J. Stat. Phys.*, **131** (2008), 613–629 [crossref](#) [MathSciNet](#) [Zentralblatt MATH](#) [ads*](#) [WEB OF SCIENCE™](#) [LIBRARY.RU](#)
- [20] S. A. Gifford, G. Baym, “Dislocation-mediated melting in superfluid vortex lattices”, *Phys. Rev. A*, **78** (2008), 043607 [crossref](#) [ads*](#) [WEB OF SCIENCE™](#)
- [21] H.H. von Grünberg, P. Keim, K. Zahn, G. Maret, “Elastic behavior of a two-dimensional crystal near melting”, *Phys. Rev. Lett.*, **93** (2004), 255703 [crossref](#) [ads*](#) [WEB OF SCIENCE™](#)
- [22] P. Dillmann, G. Maret, P. Keim, “Comparison of 2D melting criteria in a colloidal system”, *J. Phys.: Condens. Matter.*, **24** (2012), 464118 [crossref](#) [ads*](#)
- [23] H. Kleinert, “Melting of Wigner-like lattice of parallel polarized dipoles”, *Europhys. Lett.*, **102** (2013), 56002 [crossref](#) [ads*](#) [WEB OF SCIENCE™](#)