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Title:	Charge ordering in the three-dimensional Coulomb glass at finite temperatures and low disorders
Authors:	Bhandari, P. (/jspui/browse?type=author&value=Bhandari%2C+P.) Malik, V. (/jspui/browse?type=author&value=Malik%2C+V.)
Keywords:	Glass Intelligent systems Temperature
Issue Date:	2020
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Citation:	European Physical Journal B, 93(4).
Abstract:	In this paper, we have studied the three dimensional Coulomb glass lattice model at half-filling using Monte Carlo Simulations. Annealing of the system shows a second-order transition from paramagnetic to charge-ordered phase for zero as well as small disorders. We have also calculated the critical exponents and transition temperature using a finite sizing scaling approach. The Monte Carlo simulation is done using the Metropolis algorithm, which allowed us to study larger lattice sizes. The transition temperature and the critical exponents at zero disorder matched the previous studies within numerical error. We found that the transition temperature of the system decreased as the disorder is increased. The values of critical exponents α and γ were less and value of ν more than the corresponding zero disorder values. The use of large system sizes led to the correct variation of critical exponents with the disorder.
URI:	https://link.springer.com/article/10.1140/epjb/e2020-10087-4 (https://link.springer.com/article/10.1140/epjb/e2020-10087-4) http://hdl.handle.net/123456789/3344 (http://hdl.handle.net/123456789/3344)
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