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The Ising model for the bcc, fcc and diamond lattices; a comparison¹ PER HÅKAN LUNDOW, KTH, KLAS MARKSTRÖM, Umeå University, ANDERS ROSENGREN, KTH — A large scale Monte Carlo simulation study of the Ising model for the simple cubic lattice was recently performed (Adv. Phys. **56**, 653–755 (2007)). We have complemented that with a study of the bcc, fcc and diamond lattices. Both the canonical and microcanonical ensembles were employed. We present estimates of the critical temperature and other quantities in the critical region. An analysis of the critical behaviour suggests distinct high- and low-temperature exponents, especially for the specific heat, as was obtained also for the simple cubic lattice. This discrepancy is briefly discussed.

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