# Erratum: Free energies of iron phases at high pressure and temperature: Molecular dynamics study [Phys. Rev. B 104, 104103 (2021)]

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In the original paper, the embedded-atom potential [1] (EAM) was tabulated in the insufficient range of the parameter $\rho$. That resulted in extrapolation of the attractive term of the potential instead of the interpolation. This, in turn, led to somewhat imprecise calculations of free energies of iron phases at the pressure ($P$) of 360 GPa (calculations at $P = 120$ GPa are not affected). We corrected this and computed the free energies with the new table for the parameter $\rho$. The corrected temperature of the hexagonal close-packed-body-centered cubic phase phase transition is equal to 4825 K (4785 K in the original paper), and the body-centered cubic phase melts at 7305 K (7195 K in the original paper). The phase diagram, therefore, qualitatively looks the same as computed in the original paper. The structure of phases and diffusion coefficients are almost the same. The correction is important for estimating the maximum temperatures in the solid inner core.

We appreciate M. Mendelev's help, who pointed to the inconsistency of the tabulated and original [1] versions of the EAM potential.

[1] A. B. Belonoshko, R. Ahuja, and B. Johansson, Phys. Rev. Lett. **84**, 3638 (2000).