Erratum: Effects of cobalt doping and three-dimensionality in $BaFe_2As_2$ [Phys. Rev. B 80, 104511 (2009)]

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In our density functional theory analysis of $Ba(Fe_{1-x}Co_x)_2As_2$, we observed that the extra electron donated by the Co dopant is delocalized across the whole Fe-As plane. This is incorrect; in fact, the electron remains primarily localized on the dopant. The figure below shows cuts of the change in charge density along the Fe-Fe and Fe-As directions, centered on the dopant. The change in charge density drops rapidly in both directions, indicating a strong localization of the extra electron. The variations around 1 and 1.5 $\langle a_{\text{Fe-Fe}} \rangle$ are due to the atomic displacements in the relaxed system.

These results are in agreement with those recently reported by Wadati *et al.*[1] All other conclusions of our paper are unaffected.

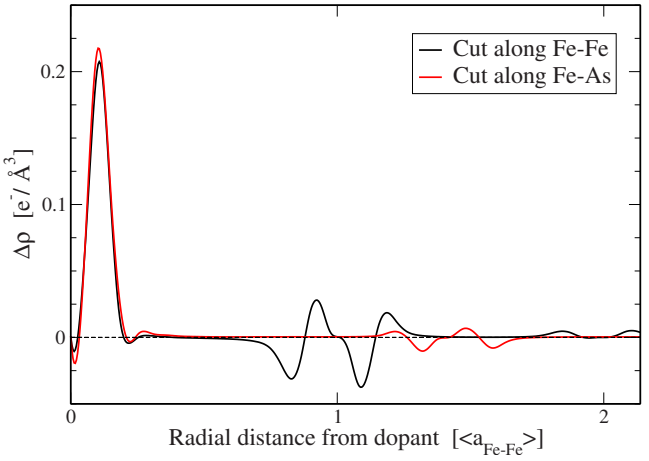

FIG. 1. (Color online) The change in charge density along two directions away from the Co dopant.

[1] H. Wadati, I. Elfimov, and G. Sawatzky, arXiv:1003.2663 (unpublished).

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