Erratum: Induced magnetic two-dimensionality by hole doping in the superconducting infinite-layer nickelate $\text{Nd}_{1-x}\text{Sr}_x\text{NiO}_2$ [Phys. Rev. B **101, 064513 (2020)]**

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While the conclusion of this paper is unaffected, two errors exist in Figs. 1(b) and 3. First, in Fig. 1(b), the density of states (DOS) of O-2p characters is two times smaller than the correct values. The corrected version of this figure is Fig. E1.

Second, we have found that the values of J_{ij} presented in Fig. 3 are half of the correct ones. The corrected version of this figure is Fig. E2. We have also realized that the definition of magnetic exchange coupling J_{ij} is omitted in this paper, which can cause confusion to readers. Our J_{ij} is defined as the coupling strength of the following spin Hamiltonian,

$$H = - \sum_{i \neq j} J_{ij} \mathbf{e}_i \cdot \mathbf{e}_j, \quad (\text{E1})$$

where $\mathbf{e}_{i(j)}$ denotes a unit vector on a site i (j). Thus, the magnitude of the spin moment of Ni is absorbed into J_{ij} . Accordingly, the values of J_{ij} presented in Fig. E2 should be interpreted with this caveat in mind.

It is worth noting that one can also follow a different (but more commonly adopted) form of the spin Hamiltonian which reads

$$H = \frac{1}{2} \sum_{i \neq j} \tilde{J}_{ij} \mathbf{S}_i \cdot \mathbf{S}_j, \quad (\text{E2})$$

where $\mathbf{S}_{i(j)}$ denotes a spin moment on a site i (j). Thus, taking the magnitude of spin moments to be $|\mathbf{S}_{i(j)}| = 1/2$, which may be a relevant value for infinite-layer nickelates, one gets the following relation,

$$\tilde{J}_{ij} = -8J_{ij}. \quad (\text{E3})$$

Hence, in this convention, $\tilde{J}_{ij}$ between in-plane nearest neighbors of updoped NdNiO_2 , namely $\tilde{J}_1^{\text{in}}$, becomes $\tilde{J}_1^{\text{in}} = -8J_1^{\text{in}} = 50.24$ meV because $J_1^{\text{in}} = -6.28$ meV. See Table E1 for first-neighbor in-plane and out-of-plane couplings.

FIG. E1. In the leftmost panel, the calculated band dispersion by LDA and LDA+DMFT is presented, respectively, with dashed green lines and color intensity. Dark and bright red regions represent the larger and smaller spectral weights, respectively, obtained by LDA+DMFT. The right two panels show the calculated DOS by LDA (middle) and by LDA+DMFT (rightmost).

FIG. E2. (a) Crystal structure of $R\text{NiO}_2$ ($R = \text{La, Nd}$). The yellow arrows depict the first-neighbor out-of-plane (J_1^{out}), the first-neighbor in-plane (J_1^{in}), and the second-neighbor in-plane (J_2^{in}) magnetic exchange couplings. (b) The calculated J_{ij} profile as a function of Ni-Ni (or Cu-Cu) interatomic distance for LaNiO_2 (blue open squares), NdNiO_2 (green solid circles; with $U = 8$ eV for Nd-4f), and CaCuO_2 (open triangle; orange). The negative and positive signs of J_{ij} represent the AFM and ferromagnetic couplings, respectively. We used GGA-PBE for LaNiO_2 and NdNiO_2 and charge-only-density version of GGA+ U ($U = 8$ and $J = 0.8$ eV with AMF double-counting) for CaCuO_2 . (c) The calculated J_1^{out} and J_1^{in} as a function of hole doping δ . For comparison, their absolute values are presented.

TABLE EI. The calculated magnetic exchange coupling constants of undoped NdNiO_2 ($\delta = 0$) obtained from GGA-PBE for two different definitions of the spin Hamiltonian.

	J_{ij} [Eq. (E1)]	$\tilde{J}_{ij}$ [Eq. (E2)]
First-neighbor in-plane	−6.28 meV	50.24 meV
First-neighbor out-of-plane	−1.92 meV	15.37 meV