Erratum: Temperature dependence of electronic eigenenergies in the adiabatic harmonic approximation [Phys. Rev. B **90**, 214304 (2014)]

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The following corrections have to be made:

(1) In order to obtain the (correct) normalization as in Eq. (46), Eq. (35) has to be replaced by

$$\frac{\partial X}{\partial R_{\kappa\alpha}(\mathbf{q})} = \sum_l e^{i\mathbf{q}\cdot\mathbf{R}_l} \frac{\partial X}{\partial R_{l\kappa\alpha}}, \quad (1)$$

so that, for example, we have

$$\left| \frac{\partial \psi_{n\mathbf{k}}}{\partial R_{\kappa\alpha}(\mathbf{q})} \right\rangle = \sum_l e^{i\mathbf{q}\cdot\mathbf{R}_l} \left| \frac{\partial \psi_{n\mathbf{k}}}{\partial R_{l\kappa\alpha}} \right\rangle, \quad (2)$$

$$\left\langle \frac{\partial \psi_{n\mathbf{k}}}{\partial R_{\kappa\alpha}(\mathbf{q})} \right| = \sum_l e^{-i\mathbf{q}\cdot\mathbf{R}_l} \left\langle \frac{\partial \psi_{n\mathbf{k}}}{\partial R_{l\kappa\alpha}} \right|. \quad (3)$$

(2) As a result, Eq. (37) has to be modified

$$\tilde{C}_{\kappa'\gamma}^{\kappa\alpha}(\mathbf{q}) = \frac{1}{N_{BvK}} \sum_{ll'} C_{l'\kappa'\gamma}^{l\kappa\alpha} e^{-i\mathbf{q}\cdot(\mathbf{R}_l - \mathbf{R}_{l'})} = \sum_{l'} C_{l'\kappa'\gamma}^{0\kappa\alpha} e^{i\mathbf{q}\cdot\mathbf{R}_{l'}} = \frac{1}{N_{BvK}} \frac{\partial^2 E^{Bo}}{\partial R_{\kappa'\alpha}(-\mathbf{q}) \partial R_{\kappa''\beta}(\mathbf{q})}. \quad (4)$$

(3) Independently, the matrix elements were written incorrectly in Eq. (46), which has to be changed into

$$\begin{aligned} \frac{\partial \varepsilon_{n\mathbf{k}}}{\partial n_{m\mathbf{q}}} = \frac{1}{2\omega_{m\mathbf{q}}} \sum_{\substack{\kappa\alpha \\ \kappa'\gamma}} U_{m,\kappa'\gamma}^*(\mathbf{q}) U_{m,\kappa\alpha}(\mathbf{q}) & \left\{ \langle u_{n\mathbf{k}}^{(0)} | \frac{\partial^2 \hat{H}_{\mathbf{k},\mathbf{k}}}{\partial R_{\kappa\alpha}(-\mathbf{q}) \partial R_{\kappa'\gamma}(\mathbf{q})} | u_{n\mathbf{k}}^{(0)} \rangle + \frac{1}{2} \left[\left\langle \frac{\partial u_{n\mathbf{k}}}{\partial R_{\kappa\alpha}(\mathbf{q})} \right| \frac{\partial \hat{H}_{\mathbf{k},\mathbf{k}}}{\partial R_{\kappa'\gamma}(\mathbf{q})} | u_{n\mathbf{k}}^{(0)} \rangle \right. \right. \\ & \left. \left. + \langle u_{n\mathbf{k}}^{(0)} | \frac{\partial \hat{H}_{\mathbf{k},\mathbf{k}}}{\partial R_{\kappa\alpha}(-\mathbf{q})} \left| \frac{\partial u_{n\mathbf{k}}}{\partial R_{\kappa'\gamma}(\mathbf{q})} \right\rangle \right] + (\kappa\alpha, \mathbf{q}) \leftrightarrow (\kappa'\gamma, -\mathbf{q}) \right\}. \end{aligned} \quad (5)$$

(4) Equation (48) must be changed accordingly to

$$\mathcal{F}_{\kappa'\gamma}^{\kappa\alpha}(\mathbf{q}) \triangleq \frac{1}{2} \left[\left\langle \frac{\partial u_{n\mathbf{k}}}{\partial R_{\kappa\alpha}(\mathbf{q})} \right| \frac{\partial \hat{H}_{\mathbf{k},\mathbf{k}}}{\partial R_{\kappa'\gamma}(\mathbf{q})} | u_{n\mathbf{k}}^{(0)} \rangle + \langle u_{n\mathbf{k}}^{(0)} | \frac{\partial \hat{H}_{\mathbf{k},\mathbf{k}}}{\partial R_{\kappa\alpha}(-\mathbf{q})} \left| \frac{\partial u_{n\mathbf{k}}}{\partial R_{\kappa'\gamma}(\mathbf{q})} \right\rangle \right] + (\kappa\alpha, \mathbf{q}) \leftrightarrow (\kappa'\gamma, -\mathbf{q}). \quad (6)$$

(5) Equation (A10) must be changed to

$$O_{\mathbf{k},\mathbf{k}'} = e^{-i\mathbf{k}\cdot\mathbf{r}} O e^{i\mathbf{k}'\cdot\mathbf{r}'}, \quad (7)$$

in agreement with Eq. (A8) of Ref. [1].

These corrections do not affect the numerical results, the ABINIT software package implementation, and the conclusions of the article.

[1] X. Gonze, *Phys. Rev. B* **55**, 10337 (1997).