Erratum: Interactions between hydrogen impurities and vacancies in Mg and Al: A comparative analysis based on density functional theory [Phys. Rev. B 80, 184110 (2009)]

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The Eq. (17) is incorrect. The correct expression, according to Ref. 32 is:

$$D^{\mathrm{trap}} = \frac{D^{\mathrm{lat}}}{1 + \frac{N^{\mathrm{tr}}}{N^{\mathrm{L}}} \exp\left(\frac{E^{\mathrm{trap}}}{k_B T}\right)}, \tag{1}$$

where N^{tr} is the number of vacancy trap sites and N^{L} is the number of interstitial lattice sites per unit volume. The qualitative conclusions drawn from Eq. (17) remain valid with the corrected expression, i.e., the reduction of the hydrogen diffusivity due to vacancy trapping in Al at small μ_{H} is still larger than the corresponding reduction in Mg. However, the reduction of the H diffusivity due to trapping at vacancies in Al amounts not to an order of magnitude, but only to about 15%, at 900 K and low μ_{H}.

