Xie and Hsu Reply Van Hooydonk's Comment [1] is not relevant to our Letter, Ref. [2]. We will show that the Comment author's claims and Fig. 1 in the Comment [1] can be refuted.

(a) The main purpose of our Letter [2] is to shed some light on the two well-known questions listed in the second paragraph of Ref. [2], and to find a reliable criterion to search for the universal character of diatomic potentials. Unfortunately, the title of Ref. [2] might have been misleading and might have been more appropriately "Aspects of Scaling Behavior for Diatomic Potential Functions." Here are our detailed responses for this point.

As an example, Refs. [2–5] reported an "approximate" universal function for nearly 200 diatomic systems (see Table I in Ref. [4] for details) with constituents having closed or S-type valence shells. These diatomic systems [2] cover ZnHe, ZnHg, LiHg, Zn_2, etc. The diatomics mentioned in the Comment ("column VII with half of all univalent atoms") [1] do not belong to this diatomic group discussed in Ref. [2]. Thus, the statement "The 200 bonds . . . only cover H and columns I, II, and VIII with noble gases" [1] is incorrect, and the claim "column VII with half of all univalent atoms is absent" [1] is out of the relevant points of Ref. [2]. Furthermore, the claim "Since column 7 with univalent atoms . . . is invalid." [1] is not correct.

The larger differences reported in Fig. 1 of the Comment [1] are from halogens X_2 (p- and p-type, e.g., Cl_2) and ionic MX (S- and p-type, e.g., HCl), which do not belong to the similar diatomic group discussed in our Letter [2]. Thus, Fig. 1 in the Comment does not apply and shows that the relevant part of Ref. [2] has been misunderstood. The ionic MX [1], as shown in Ref. [6], belongs to another diatomic group, different from the diatomic group discussed in Ref. [2]. Thus their deviations (20% for G) from other groups are expected and demonstrate our main point [2,3] that we need to classify diatomic groups to search for approximate universal features for diatomic systems with similar linkages.

(b) Dimensionless scaling with the ionic Sutherland parameter D_{ion} is interesting. However, we would not like to make any further comment on this issue since addressing this issue is outside the scope of the relevant points of our Letter. We note that Ref. [2] addresses the partially ionic issue and cites the relevant literature. We contradict hereby the statement in the Comment [1] that D_{ion} and the work in Ref. [5] of the Comment was not mentioned.

(c) In the Comment [1] the author compares the derived results at the potential minimum with our approach and claims that "This model is not . . . accurately." However, the relevant parts of our Letter [2] address the universal scaling features, not only in the neighborhood of the potential minimum, but also away from the vicinity of the potential minimum, thereby disproving the aforementioned statement.

The Comment [1] also mentions Kratzer's scaling scheme, but the Kratzer scheme cannot show a single binding-energy relation for weakly and strongly bound diatomic systems. As shown in Fig. 3(a) of Ref. [2], the weakly bound He_2 can be distinguished from the strongly bound H_2 and H_2^+ in the Kratzer scheme. However, using our dimensionless length $R^* = (R - R_e)/L_2$ [2], we find that nearly 200 systems, as shown in Fig. 3(b) in Ref. [2] and in Fig. C of Ref. [4], could have a universal reduced potential curve (similar to that of H_2^+) away from the potential minimum. Our scaling scheme has provided a unified description of both weakly and strongly bound diatomic systems [2] and our reduced potential curve can find a wide range of applications.

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Received 19 December 2007; published 14 April 2008
DOI: 10.1103/PhysRevLett.100.159302
PACS numbers: 34.20.−b, 21.45.−v, 33.15.−e, 36.40.−c

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