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ERRATUM TO "CHAIN LEVEL FLOER THEORY AND HOFER'S GEOMETRY OF THE HAMILTONIAN DIFFEOMORPHISM GROUP", ASIAN J. MATH., VOL. 6, NO. 4, 579–624, 2002*

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1. In the proof of Proposition 7.11 (Non-pushing down lemma II) (more specifically in the proof of $(P3.j+1)$ for the autonomous Hamiltonian G), the present author implicitly presumed that when we apply the Floer theory, the perturbed autonomous Hamiltonian of G also satisfies the main hypotheses of Theorem I. However the perturbed Hamiltonian does not have to satisfy (i) in the hypothesis because it is possible for small non-constant periodic orbits to bifurcate from other critical points. In this case, the cycle α_j there can be possibly pushed down due to the possibility that there can be some "thick" trajectory landing at the cricial point $[x^-, w_{x^-}]$ issued from these small periodic orbit. This is especially the case if there is one such periodic orbit z and a bounding disc w such that $\mu([z,w]) = \mu([x^-, w_{x^-}]) + 1$. We will further scrutinize this condition elsewhere. At the moment, the proof in [Oh1] proves only the following weaker version than Theorem I stated in the paper [Oh1]

Theorem I. *Suppose that G is quasi-autonomoous Hamiltonian such that*

(1) *it has no nonconstant contractible periodic orbits of period less than or equal to one.*

(2) *it has a fixed maximum and a fixed minimum that are non-degnerate and not over-twisted.*

Then its Hamiltonian path ϕ_G^t is length minimizing in its homotopy class with fixed ends for $0 \leq t \leq 1$, in cases

(i) (M, ω) is weakly exact

(ii) G is autonomous whose critical points are all non-degenerate in the Floer theoretic sense, i.e., there is no periodic orbit of period one for the linearized flow of X_G at any critical point of G.

2. As a result, the content of the weakly exact case (1) is essentially the same as that of the previous result [Theorem 5.4, LM], and the content of the autonomous case (2) of Theorem I is not an improvement but essentially the same as that of [MS] or that of [En] (for the strongly semi-positive case). In both cases, we provided a unified proof based on the chain level Floer theory.

3. The phrase "of period of less than or equal to one" can be replaced by "of period one". This improvement in the statement of the replaced version of the theorem above is due to Kerman-Lalonde [KL] for the case (1), and subsquently by the present author for the case (2) [Oh2].

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