

CORRECTION TO "HÖLDER FOLIATIONS"

CHARLES PUGH, MICHAEL SHUB, AND AMIE WILKINSON

A. Török has pointed out to us the need for a better proof of [1, Theorem B]. Accordingly, the first two full paragraphs on [1, p. 539] should be replaced with the following argument.

We are trying to show that the subfoliation of the center unstable leaves by the strong unstable leaves is of class C^1. Let W denote the disjoint union of the center unstable leaves:

$$W = \bigsqcup W^{cu}(p).$$

It is a nonseparable manifold of class C^1. Partial hyperbolicity implies that its tangent bundle $TW = E^{cu}$ is continuous. The restriction of TM to W is a C^1 bundle $T_W M$ that contains the C^0 subbundle TW. Since f is a diffeomorphism of class C^2, the tangent map

$$Tf : T_W M \longrightarrow T_W M$$

is a C^1 bundle isomorphism. As in the proof of Theorem A (see [1, pp. 527–538]), approximate E^u, E^{cs} by smooth bundles $\widetilde{E}^u$, $\widetilde{E}^{cs}$, and express Tf with respect to the splitting $TM = \widetilde{E}^u \oplus \widetilde{E}^{cs}$ as

$$\begin{pmatrix} A & B \\ C & K \end{pmatrix}.$$

Let $\widetilde{\mathcal{P}}(1)$ be the bundle over W whose fiber at p is the set of linear maps $P : \widetilde{E}^u_p \to \widetilde{E}^{cs}_p$ such that $\|P\| \le 1$. The linear graph transform sends P to

$$\Gamma_{Tf}(P) = \big(C + KP\big) \circ \big(A + BP\big)^{-1}.$$

It is a bundle map that covers the identity on W, contracts fibers by approximately $\|K\|\|A^{-1}\| \doteq \|T^c f\|/m(T^u f)$, and contracts the base, at worst, by approximately $m(A) \doteq m(T^c f)$. The unique invariant section $p \mapsto P_p$ of $\widetilde{\mathcal{P}}(1)$ of Γ_{Tf} has graph $P_p = E^u_p$. Center bunching implies that

$$\big(\text{fiber contraction}\big)\big(\text{base contraction}\big)^{-1} \doteq \frac{\|T^c f\|}{m\big(T^u f\big)}\big(m\big(T^c f\big)\big)^{-1} < 1.$$

Received 16 August 1999.
2000 *Mathematics Subject Classification*. Primary 37D30.