Exercise B.1. Let $f_A(\underline{x}) = \begin{pmatrix} 2 & 1 \\ 1 & 1 \end{pmatrix} (\underline{x})$. Let $p \in \mathbb{T}^2$ and call

$$S(p) = \{[x, y] : x \in W^u_{loc}(p), y \in W^s_{loc}(p)\}$$

For each $q \in W^s_{loc}(p)$, define the *stable holonomy map* $h_s : W^u_{loc}(p) \to W^u_{loc}(q)$ by

$$h_s(x) := W^s_{loc}(x) \cap W^u_{loc}(q)$$

Prove that if $B \subset W^u_{loc}(p)$ satisfies $\mu^u_p(B) = 0$, then $\mu^u_q(h_s(B)) = 0$.

Exercise B.2. Now let $f : \mathbb{T}^2 \to \mathbb{T}^2$ be any C^2 Anosov diffeomorphims preserving a volume μ. Define h_s, the stable holonomy map, as above. Prove that h_s is a diffeomorphism onto its image. Conclude that if $B \subset W^u_{loc}(p)$ satisfies $\mu^u_p(B) = 0$, then $\mu^u_q(h_s(B)) = 0$. This concept is called *transverse absolute continuity.*