MR572582 (81k:57022) 57R30
Ghys, E.; **Sergiescu, V.**
Stabilité et conjugaison différentiable pour certains feuilletages. (French)
Topology **19** (1980), *no. 2,* 179–197.

Let M^3 be a torus bundle over S^1 with hyperbolic glueing map, i.e. the glueing map is a linear map A of the 2-torus T with $|\operatorname{tr} A| > 2$. Let $\mathcal{F}_s$ [$\mathcal{F}_u$] be the suspension to M^3 of the stable [unstable] foliation of the Anosov map A of T. The authors show that if $\det A = 1$ and $\operatorname{tr} A > 2$ (i.e. M^3 is orientable and $\mathcal{F}_s, \mathcal{F}_u$ are transversely orientable), then every transversely orientable C^r foliation $(r \geq 2)$ of M^3 without compact leaves is C^{r-2}-conjugate to one of the foliations $\mathcal{F}_s, \mathcal{F}_u$. From this they conclude that a C^1-perturbation of such a foliation is C^{r-2}-conjugate to the original one if $r \geq 3$. As applications, they obtain a classification of transversely orientable codimension-one C^2-foliations without Reeb components on orientable 3-manifolds with solvable fundamental group [see also J. F. Plante, Invent. Math. **51** (1979), no. 3, 219–230; MR0530629 (80i:57020)]. They discuss real analytic foliations of 3-manifolds with solvable fundamental group. They also note that the foliations $\mathcal{F}_s, \mathcal{F}_u$ can be obtained as the orbits of a locally free action of the 2-dimensional solvable (nonabelian) Lie group G and show that every C^r-foliation obtained from a locally free action of G on a 3-manifold with solvable fundamental group is conjugate to some $\mathcal{F}_u$ or $\mathcal{F}_s$ $(r \geq 2)$.

Reviewed by *Elmar Vogt*