J. Math. KyotoUniv. (JMKYAZ)
18-1 (1978) 189-197

A remark on the foliated cobordisms of codimension-one foliated 3-manifolds

by

Kazuhiko FUKUI

(Received April 25, 1977)

Introduction

In [6], Rosenberg and Thurston posed the following problem: Are the Reeb foliations of S^3 foliated cobordant to zero? And Mizutani [5] and Sergeraert [7] gave the affirmative answer.

The purpose of this note is to generalize their result.

Let M^3 be an oriented closed 3-manifold. Then the manifold M^3 has a spinnable structure (cf. Alexander [1]). By the wellknown method [3], we can construct a foliation on M^3 from this spinnable structure $\mathscr{S}$. Let this foliation denote $\mathscr{F}_{\mathscr{S}}$. Note that the Reeb foliations of S^3 are also constructed from a spinnable structure of S^3.

Our main theorem is as follows:

Theorem. *For any oriented closed 3-manifold M^3 with any spinnable structure $\mathscr{S}$, the foliated manifold $(M^3, \mathscr{F}_{\mathscr{S}})$ is foliated cobordant to zero.*

We shall work in the smooth category and all the foliations we shall consider, will be smooth and of codimension one.

§1. Reeb foliations and results of Sergeraert

We consider the Reeb foliation on S^3. Let T^2 be a torus which is a unique compact leaf of this foliation. The *holonomy* along T^2 is a homomorphism of groups, $\mathscr{H}: \pi_1(T^2)\to G$, where G is the set of germs at 0 of C^∞-diffeomorphisms of $\boldsymbol{R}$, $f: \boldsymbol{R}\to\boldsymbol{R}$, with $f(0)=0$. Let p_1, p_2 be the standard generators of $\pi_1(T^2)$. If we orient adequately a small