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ABSTRACT. M. Lladrés and A. Reventós gave a necessary and sufficient condition for a Lie \mathfrak{g} -flow on a closed 3-manifold to be the characteristic foliation of a contact form. The aim of this paper is to generalize the Lladrés and Reventós's result for an arbitrary odd-dimensional closed manifold. Moreover, for a Lie flow \mathcal{F} satisfying some cohomological condition, we will construct a good contact form such that the characteristic foliation coincides with \mathcal{F} .

1. INTRODUCTION

Throughout this paper, we suppose all manifolds to be closed, smooth, and orientable and all foliations to be smooth and transversely orientable.

Let M be a closed $(2n+1)$ -dimensional manifold and let α be a contact form on M . The Reeb vector field X on the contact manifold (M, α) is the vector field on M defined by the equations $\alpha(X) = 1$ and $i_X\alpha = 0$. The one-dimensional foliation \mathcal{F} defined by X is called the *characteristic foliation of (M, α)* . The topology of the Reeb vector field X or the characteristic foliation \mathcal{F} is, in general, quite complicated. Therefore, for a given contact manifold, to decide the topology of the characteristic foliation is an important problem.

Related to this problem, for a given one-dimensional foliation \mathcal{F} , it is also an important problem to decide whether the foliation can be realized as the characteristic foliation of a contact form. In this paper, we study on this problem in the case where \mathcal{F} is a Lie foliation.

M. Nicolau and A. Reventós [7] gave a necessary and sufficient condition for a Seifert fibration \mathcal{F} on a closed 3-manifold to be the characteristic

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