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SUBMANIFOLDS OF F-STRUCTURE MANIFOLD SATISFYING $F^K + (-)^{K+1}F = 0$

LoveJoy S. Das

Abstract. Invariant submanifolds have been studied by Blair, Ludden, Yano, Kubo, Yano and Okumura, and among others. Yano and Ishihara have studied and shown that any invariant submanifold of codimension 2 in a contact Riemannian manifold is also a contact Riemannian manifold. The purpose of this paper is to study invariant submanifolds of an n-dimensional manifold M endowed with a F-structure satisfying $F^K + (-)^{K+1}F = 0$ and $F^W + (-)^{W+1}F \neq 0$ for $1 < W < K$, where K is a fixed positive integer greater than 2. The case when K is odd (≥ 3) has been considered in this paper. In the first part of the paper we have shown that an invariant submanifold $\widetilde{M}$ embedded in an F-structure manifold M in such a way that the complementary distribution D_m is never tangential to the invariant submanifold $\Psi(\tilde{M})$, is an almost complex manifold with the induced $\widetilde{F}$-structure. In the later part of the paper some theorems regarding the integrability conditions of induced $\widetilde{F}$-structure have been proved.

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Department of Mathematics and Computer Science, Kent State University, USA
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