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Classification of Topological Fibre Bundles.

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1. A fibre bundle A over B with fibre F is a join of a finite number of its portions, each of which is a product space of F and an open subset of B. These portions are joined according to a *certain* law, and it is our main concern to know the topological structure of A from the knowledge of those of B and F, and of the law of joining. But this is, in general, impossible, for the definition of a fibre bundle contains indeed the existence of such a law, but nothing to specify it.

There is, however, another view point, where a fibre bundle is generated by a B-parameter motion of F in some space. This was suggested in the recent work of N. E. Steenrod [1], classifying sphere-bundles over a complex. In order to define B-parameter motions strictly, we have first to define the continuity of many valued functions, which is itself an interesting subject.

The author has investigated along the above line, and introduced the concept of F-continuity, which is recognized useful and convenient because of its intuitivity.

In § 2 the classification theorem of topological fibre bundles are formulated in an analogous form to those of N. E. Steenrod. In §§ 3-6 the proofs thereof are given. In §7 a generalization of the Feldbau's classification theorem is deduced as an application of our theorems. In § 8 homotopy groups with respect to many valued functions are discussed.

2. Let f be a many valued function of a topological space B into another topological space Ω.

f is *continuous* if the following conditions are satisfied: For each $b_0 \in B$ there exist a neighborhood V ($*$-nbd.) of b_0 and a family $\{\sigma_b\}$ of homeomorphisms such that,

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