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CERTAIN BICOMPLEX DICTIONARY ORDER TOPOLOGIES

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Abstract

In this paper, we have initiated the study of certain order topologies on the bicomplex space C2. In section 2, we have defined three types of dictionary order relations on C2 and have shown that two of them (the real ordering and the complex ordering) are equivalent in some sense, whereas the third ordering (the idempotent ordering) is different from the other two. Section 3 deals with the topologies generated by these three order relations. All these topologies are shown to be equivalent. Section 4, discusses few interesting topologies on C2 different from the earlier topologies namely, idempotent product topology and idempotent metric topology. Both these topologies have shown to be equivalent. The idempotent order topology is strictly finer than these topologies.

Key Words: Bicomplex Numbers, Dictionary Order Relation, Bicomplex Topologies, Order Topology, Product Topology and Metric Topology.

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