On a Tau-Divisor Topology

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This research looks to define a basis and the behavior of the Tau-divisor topology. This can be viewed as a permutation of the usual divisor topology by implementing the Tau-factorization theory which modifies the list of available divisors for each nonzero non-unit integer. That is, x and y can be multiplied if they are related under Tau, the equivalence relation modulo 2 on the nonzero non-unit integers. In other words, x and y are related under Tau if 2 divides their difference. By understanding the Tau-products and observing the Tau-factors, three integer forms were discovered, each determined by the power of 2 that divides each integer. With these three types of sets, it was possible to define a basis for the Tau-divisor topology, which turns out to satisfy the first axiom of separability. In a recent discovery, the Tau-factorizations into special types of Tau-atoms (called Tau-primes), if they exist, are unique. Hence, there is a chance that this theory can help to create a new encryption and decryption system. On the other hand, each relation is a network, the Tau-factorizations act as a tool to understand parts of it, and this topology could help to describe it.

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