

## Werk

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A NOTE ON PRODUCT OF TOPOLOGICAL SPACES

(Preliminary communication)

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Let  $X$  be a topological space. Define an equivalence  $\sim$  on the set  $N$  of all natural numbers such that  $m \sim n$  iff  $X^m$  is homeomorphic to  $X^n$ . Clearly,  $\sim$  is a congruence on the additive semigroup  $(N, +)$ . The following theorem is fulfilled:

Theorem. For every congruence  $\sim$  on  $(N, +)$  there exists a locally compact separable metric space  $X$  such that  $X^m$  is homeomorphic to  $X^n$  iff  $m \sim n$ .

This result and some related questions will appear in Fundamenta Mathematicae under the title "  $X^m$  is homeomorphic to  $X^n$  iff  $m \sim n$  where  $\sim$  is a congruence on natural numbers".

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