

Toposym 3

Mary Ellen Rudin

Box products

In: Josef Novák (ed.): General Topology and its Relations to Modern Analysis and Algebra, Proceedings of the Third Prague Topological Symposium, 1971. Academia Publishing House of the Czechoslovak Academy of Sciences, Praha, 1972. pp. 385.

Persistent URL: <http://dml.cz/dmlcz/700793>

Terms of use:

© Institute of Mathematics AS CR, 1972

Institute of Mathematics of the Academy of Sciences of the Czech Republic provides access to digitized documents strictly for personal use. Each copy of any part of this document must contain these *Terms of use*.



This paper has been digitized, optimized for electronic delivery and stamped with digital signature within the project *DML-CZ: The Czech Digital Mathematics Library* <http://project.dml.cz>

BOX PRODUCTS

M. E. RUDIN

Madison

Suppose $\{X_n\}_{n \in \omega_0}$ is a family of topological spaces. Then $\prod_{n \in \omega_0} U_n$ is called a *box* provided U_n is a non-empty open subset of X_n for each $n \in \omega_0$. The box product of $\{X_n\}_{n \in \omega_0}$ is $\prod_{n \in \omega_0} X_n$ topologized by using the set of all boxes as a basis. The Continuum Hypothesis implies the box product of countably many locally compact σ -compact metric spaces is paracompact. The Continuum Hypothesis implies the box product of countably many σ -compact ordinals is paracompact. And the Generalized Continuum Hypothesis implies the box product of countably many ordinals is normal (but not paracompact) if one of the ordinals has uncountable cofinality which is greater than the cardinality of the other ordinals and is not the successor of a singular cardinal. Of course, if one of the ordinals is of uncountable cofinality less than the cardinality of another, no product including both can be normal.