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SUMMARIES OF ARTICLES PUBLISHED IN THIS ISSUE

(Publication of these summaries is permitted)

JORGE MARTINEZ, Gainesville: *Free products of abelian l -groups*. Czech. Math. J. 23 (98), (1973), 349–361. (Original paper.)

In this article we study the structure of the free product of two abelian lattice-ordered groups (l -groups). For the most part our results are for free products of Archimedean o -groups, but we do get some generalizations. We show that if $G = A \amalg B$, $0 < a \in A$ and $0 < b \in B$ then a and b have uncountably many values in common in G , and neither is singular; this without any restrictive assumptions on A or B . If A and B are Archimedean o -groups we prove that G has no basic elements. If in addition $A \boxplus B$ satisfies a certain geometric condition, then G has no singular elements at all, and each nonzero element has uncountably many values. In this case we can realize G as an l -group of continuous, real valued functions on the closed unit interval. Next, we investigate when the free product of two subdirect products of integers is again a subdirect product of integers. We show that if A and B have the property that all their regular l -ideals have cyclic factors, then $G = A \amalg B$ is a subdirect product of integers; this is so, in particular, when A and B are small cardinal sums of copies of \mathbb{Z} , the additive integers.

TEO STURM, Praha: *Zu Äquivalenz- und Ordnungsrelationen*. Czech. Math. J. 23 (98), (1973), 362–374. (Originalartikel.)

Diese Arbeit knüpft unmittelbar an die frühere Abhandlungen des Verfassers an. Im ersten Teil wird insbesondere gezeigt, dass zu jeder Äquivalenz ϱ auf A , für welche $\text{card } A/\varrho \geq 4$ ist, eine zwei Elemente enthaltende e -Charakteristik \mathcal{V} existiert, deren beide Elemente Wohlordnungen auf A sind. Im zweiten Teil werden Systeme aller Ordnungen auf A untersucht, welche der Minimalbedingung genügen und für welche die gegebene Teiläquivalenz schwach faktorisierend ist.

TEO STURM, Praha: *Einige Charakterisationen von Ketten*. Czech. Math. J. 23 (98), 1973, 375–391. (Originalartikel.)

(A, u) sei eine u -geordnete Menge, $A \neq \emptyset$. $E(A)$ sei die Menge aller Äquivalenzen auf A . $\bar{K}(A, u)$ sei die Menge aller $\sigma \in E(A)$, für die jedes Element aus A/σ eine u -konvexe Teilmenge von A ist. $G(A, u)$ sei die Menge aller Kerne isotoner, auf (A, u) definierter Abbildungen. Ist (A, u) ein Verband, so sei $L(A, u)$ die Menge aller Verbandskongruenzrelationen auf (A, u) ; ist (A, u) kein Verband, so sei $L(A, u) = \emptyset$. Es zeigt sich u.a., dass ein unmittelbarer Zusammenhang zwischen der Distributivität des Verbandes ($\bar{K}(A, u), \subseteq$) und der Tatsache, dass (A, u) eine Kette ist, existiert. Es werden Ordnungen u auf A charakterisiert, für die irgendeine der Gleichheiten $L(A, u) = E(A)$, $G(A, u) = E(A)$, $\bar{K}(A, u) = E(A)$, $L(A, u) = \bar{K}(A, u)$, $G(A, u) = \bar{K}(A, u)$ oder $L(A, u) = G(A, u)$ gilt. Es werden Ordnungen u auf A charakterisiert, für die der vollständige Verband ($G(A, u), \subseteq$) oder ($\bar{K}(A, u), \subseteq$) im vollständigen Verband ($E(A), \subseteq$) abgeschlossen ist.

D. W. MACLEAN, Saskatoon: *A noncompact h-cobordism theorem*. Czech. Math. J. 23 (98), (1973), 392–396. (Original paper.)

The object of this paper is to generalize a theorem due to E. Luft, and then to apply it to strengthen a topological h -cobordism theorem of E. H. Connel. Author's techniques and arguments apply equally well to the piecewise linear and smooth categories of manifolds, but he states theorems in terms of topological manifolds, since it is in the topological category that all of results are believed to be new.

PAUL R. FALLONE, Jr., Storrs: *Level sets and neighborhoods of stable attractors*. Czech. Math. J. 23 (98), (1973), 397–401. (Original paper.)

Some topological properties of the domains of attraction $A(F)$ of compact invariant positively stable sets F in a locally compact metric space X with respect to a dynamical system π on X are studied. Ljapunov function v on X is used to investigate some topological properties of the neighborhood of the set F in the domain $A(F)$. Effective methods of construction of compact connected neighborhoods of invariant sets are given, as well as some methods of analysis of the topological properties of their boundaries. In the conclusion it is shown that for $X = E^n$, the boundaries of such neighborhoods are Peano spaces and, particularly, Jordan curves for $X = E^2$.

PAUL R. MAYER, New York: *The Sorgenfrey topology is a join of orderable topologies*. Czech. Math. J. 23 (98), (1973), 402–403. (Original paper.)

The Sorgenfrey half open interval topology on the real line R is shown to be the join (in the lattice of all topologies on R) of two orderable topologies. This is in contrast with a result of Lutzer who showed that this topology is not orderable.

J. DALTON TARWATER, Lubbock and ROY W. WHITMORE, Nacogdoches: *k-path Euler graphs*. Czech. Math. J. 23 (98), (1973), 413–418. (Original paper.)

Whenever a graph contains an Euler cycle, the graph is referred to as an Euler graph. An Euler graph is said to be randomly traceable from a vertex v if an Euler cycle can be constructed from v by choosing at each step in the path any edge not already chosen. Of course, not every Euler graph is randomly traceable. A graph will be called a k -path Euler graph if a random selection of edges will suffice for k steps, or less, but not for more than k steps. The purpose of this article is to present some of the properties of k -path Euler graphs.

JIRÍ KOPÁČEK, Praha: *On L_p -estimates for hyperbolic systems*. Czech. Math. J. 23 (98), (1973), 419–436. (Original paper.)

In this paper the author gives the proofs of three theorems announced in the author's previous paper published in CMUC 1969, 237–239.

DARRELL C. KENT, Pullman and GARY D. RICHARDSON, Greenville: *The decomposition series of a convergence space*. Czech. Math. J. 23 (98), (1973), 437—446. (Original paper.)

The paper is divided into two sections; the first treats the behavior of the decomposition series relative to such basic constructions as products, quotients, disjoint sums, and subspaces, while the second is concerned with the length of the series. In the second section, authors first obtain certain conditions under which the series length will be bounded, and then proceed to show that some important classes of convergence spaces, such as locally compact regular and minimal regular spaces, can have arbitrarily long decomposition series.

PAVEL JAMBOR, Praha: *An orthogonal theory of a set-valued bifunctor*. Czech. Math. J. 23 (98), (1973), 447—454. (Original paper.)

The paper extends the concept of a pure and a torsion theory with respect to a given set-valued bifunctor. As a main application, the complete description of the orthogonal theories of the tensor and the torsion product together with an important example of the orthogonal theories of the bifunctor Ext in abelian groups is given.

BŘETISLAV NOVÁK, Praha: *Mittelwertsätze der Gitterpunktlehre III*. Czech. Math. J. 23 (98), (1973), 467—482. (Originalartikel.)

In der vorliegenden Arbeit wird eine neue einfache Methode für die Untersuchung der Mittelwerte in der Gitterpunkttheorie erklärt.

PAVLA VRBOVÁ, Praha: *On local spectral properties of operators in Banach spaces*. Czech. Math. J. 23 (98), (1973), 483—492. (Original paper.)

A simple lemma concerning coefficients of a holomorphic function is proved. This lemma makes it possible to give an elementary proof of the local version of the spectral mapping theorem. It is proved that the sets of all elements of a Banach space possessing extremally large spectra with respect to a bounded linear operator are nonmeagre. This fact is then used to obtain a simple proof of the fact that every locally quasialebraic operator acting in a Banach space is quasialebraic.

PAVLA VRBOVÁ, Praha: *Structure of maximal spectral spaces of generalized scalar operators*. Czech. Math. J. 23 (98), (1973), 493—496. (Original paper.)

The following characterization of maximal spectral spaces $X_T(F)$ of generalized scalar operator T acting in a Banach space X is given: There exists a natural number p such that $X_T(F) = \bigcap_{\lambda \notin F} (\lambda - T)^p X$ for every closed subset F of the complex plane.

Ivo VRKOČ, Praha: *Continuous dependence of holomorphic functions on partly given boundary values*. Czech. Math. J. 23 (98), (1973), 455–466. (Original paper.)

The article deals with the stability of the continuation of holomorphic functions from one part of the boundary to another. There are given various assumptions (e.g. Lipschitz continuity on a given part of boundary with a given coefficient N , boundedness of the functions with a given number M) under which the problem is stable.

TIBOR ŠALÁT, Bratislava: *Bemerkung über die Verteilung von Ziffern in Cantorschen Reihen*. Czech. Math. J. 23 (98), (1973), 497–499. (Originalartikel.)

In der vorliegenden Arbeit knüpft der Verfasser an seine früheren Arbeiten an und erweitert die Untersuchung der Mengen $H(q_1, q_2, \dots)$ und $H^*(q_1, q_2, \dots)$, welche einige Eigenschaften der Cantorschen Entwicklungen der Zahlen $x \in \langle 0, 1 \rangle$ beschreiben.

JOSEF VALA, Brno: *Über die Dualisation einiger Paare von Mannigfaltigkeiten mit linearen Erzeugenden*. Czech. Math. J. 23 (98), (1973), 509–520. (Originalartikel.)

Diese Arbeit knüpft an den Artikel: „Über einige Mannigfaltigkeiten mit linearen Erzeugenden“, Czech. Math. J. 22 (1972), 242–265, an. Es werden die Eigenschaften der Dualisation der Paare der Pseudokongruenzen im projektiven $(2m - 1)$ -dimensionalen Raume untersucht ($m \geq 2$). Spezielle Ergebnisse findet man besonders in den Fällen $m = 2$, $m = 3$.