1. Set Theory

Stefan Geschke *Free University of Berlin* A dual open coloring axiom

abstract I will discuss a dual of the version of the Open Coloring Axiom that was introduced by Abraham, Rubin, and Shelah and indicate how this dual OCA follows from a statement about continuous colorings on Polish spaces that is known to be consistent. I will also mention some consequences of the new axiom.

Neil Hindman *Howard University* Discrete n-tuples in Hausdorff spaces

abstract We investigate the following three questions: Let $n \in N$. For which Hausdorff spaces X is it true that whenever Γ is an arbitrary (respectively finite to one) (respectively injective) function from N^n to X, there must exist an infinite subset M of N such that $\Gamma[M^n]$ is discrete? Of course, if $n = 1$ the answer to all three questions is "all of them". For $n \geq 2$ the answers to the second and third questions are the same; in the case $n = 2$ that answer is "those for which there are only finitely many points which are the limit of injective sequences". The answers to the remaining instances involve the notion of *n-Ramsey limit*. We show also that the class of spaces satisfying these discreteness conclusions for all n includes the class of F-spaces. In particular, it includes the Stone-Čech compactification of any discrete space.

Justin Tatch Moore *Boise State University* Recent developments in basis problems

abstract I will present the following ZFC result.

Theorem: There is a hereditarily Lindelöf, non-separable space.

One immediate consequence is that the uncountable regular topological spaces do not have a three element basis. The combinatorial object which makes the construction work also gives a number of other examples. In particular it produces a binary relation R which is neither below $\omega \cdot \omega_1$ nor above $[\omega_1]^{<\omega}$ in the Tukey order. It also gives an example of a function c from $\omega_1 \times \omega_1$ to ω_1 which takes all values on any product of uncountable sets.

A.A. Salama *Department of Mathematics - Faculty of Education - Suez* - Compactness in Fuzzy Topological Spaces

abstract The purpose of this paper is to introduce and studied the concept of -compactness in the light of the concept of -shading in a fuzzy setting. A characterization of -compactness is given by using the concept of -finite intersection property due to [1]. We define the notion of fuzzy T2-space and by using it we give some properties of -compactness. Also the image and the inverse image of compactness under some types of functions are investigated. Keywords: Fuzzy topological spaces, fuzzy -compactness, fuzzy -compactness, fuzzy -near compactness, fuzzy -continuity, fuzzy weakly -continuity, fuzzy T2-space, fuzzy -open sets.

Juris Steprans *York University* Combinatorial questions associated with cardinal invariants of measure

abstravt The problem of obtaining models oof set theory where all sets of reals of size $\aleph_1$ are null yet there are sets of reals of cardinality $\aleph_1$ that are not null with respect to other natural measures involves establishing combinatorial lemmas about finite measure spaces. These will be discussed.