Fall 2002 and Spring 2003
UF Graduate Student TOPOLOGY SEMINAR

Fall Semester: Tuesdays 7th Period (1:55-2:45 PM)

305 Little Hall

Schedule of Talks for Fall Semester

August 27

Alexander Dranishnikov, *Yang's theorem on p-adic actions on manifolds*

September 3

Rustam Sadykov, *Smooth mappings without certain singularities*

Abstract. I am going to present my new result on singularities of smooth mappings. The result gives the first nontrivial example of a complete obstruction to the existence of a mapping without cirtain singularities in the case where the homological obstruction fails to detect the existence of such a mapping. Theorem. A mapping f: M->N from an orientable closed 4-manifold into an orientable 3-manifold is homotopic to a fold mapping (i.e. a mapping with only fold singular points) if and only if there is a class b in the 2-cohomology group of M such that \sigma + b*b[M] = 0, where \sigma is the signature of the intersection form of M and b*b[M] is the value of b*b on the fundamental class of M.

September 10

Rustam Sadykov, *Smooth mappings without certain singularities* (continued)

September 17

Rustam Sadykov, *Smooth mappings without certain singularities* (continued)

September 24

Yuri Turygin, *Extension, localization and cohomological dimension*

October 8

Yuri Turygin, *Cohomological dimension of compacta*

October 15

Yuri Turygin, *Cohomological dimension of compacta*(continued)

October 22

Sergei Melikhov, *Coxeter groups and aspherical manifolds*

October 29

Yuri Turygin, *Bockstein Theorem*

November 5

Sergei Melikhov, *Coxeter groups and aspherical manifolds II*

November 19

James Maissen, *Bing's Partitioning Theorems I*

[This seminar is a continuation of the one given in the *Topology and Dynamics Seminar* today.]

November 26

Rustam Sadykov, *Singularities of smooth mappings* I

December 3

Rustam Sadykov, *Singularities of smooth mappings* II

December 10

Rustam Sadykov, *Singularities of smooth mappings* III

Spring Semester: Tuesdays 8th Period (3:00-3:50 PM)

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Schedule of Talks for Spring Semester

January 21

Rustam Sadykov, *Singularities of smooth mappings*

January 28

Rustam Sadykov, *Singularities of smooth mappings* II

February 4

Sergey Melikhov, *Self-maps of n-sphere all whose point-inverses are solenoidal*

February 18

Yuri Turygin, *A fibration that does not admit two multivalued sections*

February 25

Yuri Turygin, *A fibration that does not admit two multivalued sections* II

March 4

Sergey Melikhov, *Presentations of nilpotent quotients of link groups*

Abstract. Two links in R^3 are called 1-quasi-isotopic if they are related by a homotopy whose only singularities are self-intersections of components such that at least one of the two lobes of the singular component is null-homotopic in the complement to the other components. To define k-quasi-isotopy, one strengthens this condition inductively in the spirit of the construction of a Casson handle, so that for each k, all sufficiently close PL approximations of a wild link are k-quasi-isotopic. In contrast to Waldhausen's result that ambient isotopy class of link is completely determined by the peripheral structure preserving isomorphism class of its

fundamental group, it turns out that for each k, the finest quotient of the fundamental group of link, "functorially" invariant under k-quasi-isotopy (together with the peripheral structure) is not a complete invariant of k-quasi-isotopy [math.GT/0103113]. Thus it seems natural to study presentations of this quotient, which is obtained by factoring out the (k+2)-nd terms of the lower central series of the normal closures of meridians. The presentations for k-quasi-isotopic links are related by Reidemeister moves on Wirtinger relators (reflecting isotopies between crossing changes) and certain Andrews-Curtis moves.

March 18

Michael Farber, *Higher dimensional billiards*

March 25

Rustam Sadykov, *Special generic mappings and exotic smooth structures on 4-manifolds*

April 1

Rustam Sadykov, *Special generic mappings and exotic smooth structures on 4-manifolds* II

April 8

Yuri Turygin, *Localization of nilpotent spaces*

April 15

Sergey Melikhov, *New reformulation of the Poincare Conjecture*

April 22

Yuri Turygin *Localization of nilpotent spaces* II