projecting to a virtual knot υ. We show that υ is an almost classical knot and that the Alexander polynomial of υ is obtained as an evaluation of the multi-variable Alexander polynomial of the boundary link L. This is joint work with Robb Todd.

Piroska Csörgő (Eszterhazy Karoly University, Eger, Hungary)
On Moufang loops with nontrivial nucleus

We characterize nilpotent Moufang loops of odd order, then we give a necessary and sufficient condition for the existence of nontrivial nucleus in Moufang loops of odd order. We study the relation of nilpotence with the existence of nontrivial nucleus in Moufang loops of odd order.

Sergey Davidov (Yerevan State University, Armenia)
A characterization of binary invertible algebras isotopic to an abelian group

In this paper, using a second-order formula, we obtain a characterization of invertible algebras isotopic to an abelian group.

A binary algebra $(Q;\Sigma)$ is called an invertible algebra or a system of quasigroups if each operation in Σ is a quasigroup operation. Originally, invertible algebras with second order formulas were considered by Shaufler in connection with coding theory. We say that a binary algebra $(Q;\Sigma)$ is isotopic to a groupoid $Q(\cdot)$, if each operation in Σ is isotopic to the groupoid $Q(\cdot)$.

We prove that an invertible algebra $(Q;\Sigma)$ is principally isotopic to an abelian group if and only if the following second-order formula

$$A({}^{-1}A(B(x,z),y),A^{-1}(u,B(w,y))) = A({}^{-1}A(B(w,z),y),A^{-1}(u,B(x,y)))$$

is valid in the algebra $(Q;\Sigma\cup\Sigma^{-1}\cup^{-1}\Sigma)$ for all A, $B\in\Sigma$, where $\Sigma^{-1}=\{A^{-1}|\,A\in\Sigma\}$ and ${}^{-1}\Sigma=\{{}^{-1}A|\,A\in\Sigma\}$.

Clifton E. Ealy Jr. (Western Michigan University, USA)
The classical loops over proper Kalscheuer near-fields

Let D have addition, multiplication, and distinct multiplicative and additive identities. Informally, D is a near-domain if $D^\sharp = D\setminus\{0\}$ multiplicatively is a group, D additively is a Bol loop with automorphic inverse property, and only one of the distributive laws hold. If D additively is an elementary abelian group, D is a near-field. Every field is a near-field, every near-field is a near-domain. In this talk, we study $n\times n$ matrices over D, $\mathrm{GL}(n,D)$, and $\mathrm{SL}(n,D)$ for D a proper Kalscheuer near-field.

Key words: Groups, loops, quaternions, near-fields.

Anthony Evans (Wright State University, USA)
Partial transversals in a class of latin squares

We will introduce a class of latin squares constructed from cyclic latin squares, and we will use these latin squares to prove the existence of latin squares of odd order that have maximal partial transversals of all possible lengths.

Jörg Feldvoss (University of South Alabama, USA)
Leibniz cohomology