Algebraic Cryptography Center

STEVENS Institute of Technology

Algebraic Cryptography Center Webinar

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Digraph groups and their applications

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Recording: Click here

Abstract:
For any finite digraph D we define a *digraph group* $G(D)$ with the set of arcs as generating set subject to certain commutation relations. These relations reflect the relative position of arcs. The case of transitive D is of special interest. Then $G(D)$ has a semidirect *Levi decomposition* into *semisimple* and nilpotent radical which are digraph groups in their own right. The semisimple part is a direct product of free groups and of unstable Steinberg groups over integers. There is a canonical linear representation of G(D) which is faithful on the nilpotent radical. We describe explicitly the kernel of this representation. We give an application to automorphism groups of graph groups.