



KURT GÖDEL RESEARCH CENTER FOR
MATHEMATICAL LOGIC

UNIVERSITÄT WIEN

1090 WIEN, WÄHRINGER STRASSE 25

O.UNIV.-PROF. DR. SY-DAVID FRIEDMAN



INVITATION

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(Manhattanville College, New York, USA)

CYCLE REVERSIONS AND DICHROMATIC NUMBER IN
(INFINITE) TOURNAMENTS

Abstract:

The dichromatic number for a digraph is the least number of acyclic subgraphs needed to cover the graph. In 2005, Pierre Charbit showed that by iterating the operation $\{\{\text{select a directed cycle, and reverse the direction of each arc in it}\}\}$ that the dichromatic number in any finite digraph can be lowered to 2. This is optimal, as a single directed cycle will always have dichromatic number 2. Recently, Daniel Soukup and I showed that the same is true for infinite *tournaments* of any cardinality, and in fact, we proved this by induction. Along the way to proving this, we uncovered some nice structural facts about infinite digraphs that we think are of more general interest. While this talk will be mostly graph theoretic in flavor, we did need to put on our set theory glasses to distinguish between the singular and regular cases in the induction. I should note that the question remains open for arbitrary infinite digraphs, even those of countable cardinality.

THURSDAY, NOVEMBER 16, 2017

Tea at 3:30pm in the KGRC meeting room (room 104)

Talk at 4:00pm in the KGRC lecture room (room 101)

GÖDEL RESEARCH CENTER

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