DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
UNIVERSITY OF SOUTHERN DENMARK, ODENSE

COMPUTER SCIENCE COLLOQUIUM

Subdivision of digraphs with large minimum out-degree

Phablo Moura
Department of Mathematics and Statistics
University of Sao Paolo, Brazil

Tuesday, 29 November, 2016 at 14:15
IMADA's Seminar Room

Abstract:

Given a digraph D, a subdivision of D is a digraph obtained by replacing every arc uv in D by a directed path $P(u,v)$ from u to v in such that every internal vertex of $P(u,v)$ (if any) is a newly created vertex. In 1985, Mader conjectured the existence of a function f such that every digraph with minimum out-degree at least $f(k)$ contains a subdivision of the transitive tournament of order k. This conjecture is still completely open, as the existence of $f(5)$ remains unknown. In this talk, we give some new evidences to this conjecture. More precisely, if D is an oriented path, or an in-arborescence (i.e. a tree with all edges oriented towards the root), then every digraph with minimum out-degree large enough contains a subdivision of D. Additionally, we present an overview of the main conjectures and results related to subdivisions of digraphs.

(This is a joint work with Pierre Aboulker, Nathann Cohen, Frédéric Havet, William Lochet and Stéphan Thomassé)

Host: Jørgen Bang-Jensen