

# Cycling in the Southern Hemisphere

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## Abstract

We say a (di) graph is  $k$ -traceable if every sub(di)graph of order  $k$  is traceable. Clearly a complete graph (tournament) is 2-traceable and a traceable graph is  $n$ -traceable. For small  $k$  every  $k$ -traceable graph is Hamiltonian, but that property does not hold for  $k \geq 5$ . The Traceability Conjecture (TC) is that every  $k$ -traceable graph of order at least  $2k - 1$  is traceable. Last May I worked with Frick, van Aardt, and Nielson to obtain results concerning the cycle structure of strong  $k$ -traceable oriented graphs. In particular we have an upper bound on the order of such graphs.