Graphs with Loops

Pavol Hell, Simon Fraser University, Burnaby

I will discuss examples of graph and digraph concepts that have interesting extensions if loops are allowed (but not required). There will be several unrelated examples, but the main focus will be generalizations of interval graphs, complements of threshold tolerance graphs, two-dimensional orthogonal ray graphs, chordal bipartite graphs, and strongly chordal graphs. I will also illustrate possible algorithmic advantages of such extensions.

Joint results with Tomás Feder, César Hernández-Cruz, Jing Huang, Jephian Lin, Ross McConnell, Akbar Rafiey, and Arash Rafiey will be mentioned.

Keywords: interval graph, chordal bipartite graph, strongly chordal graph