Applied Mathematics Seminar

Jessica Enright

University of Glasgow

Graph modification problems to limit worst-case outbreak sizes

I will discuss a few graph modification problems (contact deletion and contact scheduling) in graphs and dynamic graphs that were originally motivated by applications in disease control. The aim here is to modify a graph in some minimum-cost way to minimise the maximum component in the remaining graph in a static graph, or minimise the biggest reachable set from any single starting vertex in a dynamic graph. Unsurprisingly but unfortunately these modifications are formally hard in general, but I will outline some limited cases in which they are efficiently solvable.