1145-05-1728 **Rachel Kirsch*** (`r.kirsch1@lse.ac.uk`). *Many cliques with few edges.* Preliminary report.
The problem of maximizing the number of cliques has been studied within several classes of graphs. For example, among graphs on n vertices with clique number at most r, the Turán graph $T_r(n)$ maximizes the number of copies of K_t for each size t. Among graphs on m edges, the colex graph $\mathcal{C}(m)$ maximizes the number of K_t's for each size t.

In recent years, much progress has been made on the problem of maximizing the number of cliques among graphs with n vertices and maximum degree at most r. The graph $aK_{r+1} \cup K_b$, where $n = a(r+1) + b$ and $0 \leq b \leq r$, was shown to maximize the total number of cliques, and is conjectured to maximize the number of K_t's for $t \geq 3$. This conjecture has been proven in significant cases.

In this talk, we discuss the edge analogue of this problem: which graphs with m edges and maximum degree at most r have the maximum number of cliques? We prove in some cases that the extremal graphs again contain as many disjoint copies of K_{r+1} as can fit, with the leftovers in another component. In the edge analogue, these remaining edges form a colex graph. (Received September 24, 2018)