1161-05-215   **Deepak Bal***, deepak.bal@montclair.edu. *Size Ramsey numbers of paths and cycles.* Preliminary report.

Let $\mathcal{F}_1$ and $\mathcal{F}_2$ be two families of graphs. The size Ramsey number $\hat{R}(\mathcal{F}_1, \mathcal{F}_2)$ is the smallest number m such that there exists a graph G with m edges in which every red-blue coloring of $E(G)$ contains either a red graph from $\mathcal{F}_1$ or a blue graph from $\mathcal{F}_2$. Let P_n represent the path on n vertices and let $\mathcal{C}$ represent the family of all cycles. We discuss some recent progress on size Ramsey numbers in the cases where $\mathcal{F}_1 = \mathcal{F}_2 = \{P_n\}$ (improvement of lower bound) and where $\mathcal{F}_1 = \{P_n\}$, $\mathcal{F}_2 = \mathcal{C}$ (improvement of lower and upper bounds). These result are joint with Louis DeBiasio and Ely Schudrich respectively. (Received August 17, 2020)