**SEYED AHMAD MOJALLAL**, University of Regina
*Distribution of Laplacian eigenvalues of graphs*

Let $G$ be a graph of order $n$ with $m$ edges. Also let $\mu_1 \geq \mu_2 \geq \cdots \geq \mu_{n-1} \geq \mu_n = 0$ be the Laplacian eigenvalues of graph $G$ and let $\sigma = \sigma(G)$ $(1 \leq \sigma \leq n)$ be the largest positive integer such that $\mu_\sigma \geq \frac{2m}{n}$. In this talk, we show that $\mu_2(G) \geq \frac{2m}{n}$ for almost all graphs. Moreover, we characterize the extremal graphs for any graphs. We also provide the answer to Problem 3 in [Distribution of Laplacian eigenvalues of graphs, Linear Algebra Appl. 508 (2016), 48–61], that is, the characterization of all graphs with $\sigma = 1$. Moreover, we present a few relations between $\sigma$ and other graph invariants, in particular, we give a Nordhaus–Gaddum-type result for $\sigma$.