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Joshua Harrington and **Eugene Henninger-Voss***, eugene.henninger_voss@tufts.edu, and
Kedar Karhadkar, Emily Robinson and **Tony W. H. Wong**. *Sum index and difference index of graphs*. Preliminary report.

Let G be a nonempty simple graph with a vertex set V and an edge set E . For every injective vertex labeling $f : V \rightarrow \mathbb{Z}$, there are two induced edge labelings, namely $f^+ : E \rightarrow \mathbb{Z}$ defined by $f^+(uv) = f(u) + f(v)$, and $f^- : E \rightarrow \mathbb{Z}$ defined by $f^-(uv) = |f(u) - f(v)|$. The sum index and the difference index are the minimum cardinalities of the ranges of f^+ and f^- , respectively. We give the upper and lower bounds on the sum index and difference index, and determine the sum index and difference index of various families of graphs. (Received September 13, 2019)