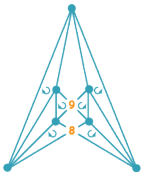

28TH WORKSHOP '3IN1' 2019
DOSŁOŃCE, POLAND
NOVEMBER 21-23, 2019

NEW RESULTS ON THE PRODUCT-IRREGULAR LABELINGS OF GRAPHS

Marcin Anholcer[1] (joint work with Azamsadat Emadi[2] and Doost Ali Mojdeh[2])

1. *Institute of Informatics and Quantitative Economics*
Poznań University of Economics and Business, Poznań, Poland
2. *Faculty of Mathematics, University of Mazandaran, Babolsar, Iran*

Consider a simple graph G. A labeling $w : E(G) \cup V(G) \to \{1, 2, \ldots, m\}$ is called *total vertex product-irregular*, if all product degrees $pd_G(v) = w(v) \times \prod_{e \ni v} w(e)$ are distinct. The goal is to obtain a total vertex product-irregular labeling that minimizes the maximum label. This minimum value is called *the total vertex product irregularity strength* and denoted $tvps(G)$. In the talk we present some general lower and upper bounds, as well as exact values for chosen families of graphs.