# New parameters for studying graceful properties of graphs

**Akito Oshima**

*Faculty of Engineering and Built Environment,*
*The University of Newcastle, NSW 2308, Australia.*

Joint work with Rikio Ichishima, Francesc A. Muntaner-Batle

**Dedicated to the memory of Professor Mirka Miller**

In this paper, we introduce two kinds of new parameters for studying graceful properties of graphs. We also establish the relation among these parameters. Moreover, we provide the relation between super edge-magic labelings and graceful labelings of trees.

*Keywords:* consecutively super edge-magic labeling, super edge-magic labeling, graceful labeling, consecutively super edge-magic deficiency, super edge-magic deficiency, alpha-number, beta-number.

akitoism@yahoo.co.jp