

# 國立中山大學應用數學系

## 學術演講

講者：Prof. Shinya Fujita  
Yokohama City University

講題：Covering vertices by monochromatic  
subgraphs in edge-colored graphs

時間：2014/03/25 (星期二) 14:10 ~ 15:00

地點：理學院四樓理 SC 4011-2 室

茶會：13:30 於理 SC 4010 室 (系辦公室)

### 摘要

We consider several covering problems in edge-colored graphs. So far, much work has been done on covering problems in edge-colored complete graphs  $K_n$ . Those come from a variety of background, but mostly the purpose in this topic is to cover the whole vertex set of the  $K_n$  by monochromatic connected subgraphs. Some recent results on this topic will be reviewed. We also introduce a covering problems on edge-colored complete bipartite graphs. We conjecture that any  $r$ -edge-colored complete bipartite graph  $K_{m,n}$  can be covered by at most  $2r-2$  monochromatic connected subgraphs. One can easily check that it can be covered by at most  $2r-1$  monochromatic connected subgraphs. In fact there exists an  $r$ -edge-coloring such that we can not cover  $V(K_{m,n})$  by  $2r-3$  monochromatic connected subgraphs. Recently, we showed that the conjecture is true for  $2 \leq r \leq 5$ .

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