Pabhapote, N.

**Group divisible designs with two associate classes and with two unequal groups**


School of Science and Technology, University of the Thai Chamber of Commerce, Dindaeng, Bangkok, 10400, Thailand

**Abstract**

A group divisible design GDD(m, n; 3, λ₁, λ₂) is an ordered triple (V, G, B), where V is a m + n-set of symbols, G is a partition of V into 2 sets of sizes m, n, each set being called group, and B is a collection of 3-subsets (called blocks) of V, such that each pair of symbols from the same group occurs in exactly λ₁ blocks; and each pair of symbols from different groups occurs in exactly λ₂ blocks. In this paper, we find necessary and sufficient conditions for the existence of a GDD(m, n; 3, λ₁, λ₂) with λ₁ ≥ λ₂. © 2012 Academic Publications, Ltd.

**Author Keywords**

Graph decomposition; Group divisible design

**References**

- Bose, R.C., Shimamoto, T.
  **Classification and analysis of partially balanced incomplete block designs with two associate classes**

- Chaiyasena, A., Hurd, S.P., Punnim, N., Sarvate, D.G.
  **Group divisible designs with two associattion classes to appear**
  *Journal of Combinatorial Mathematics and Combinatorial Computing*, submitted

- Chaiyasena, A., Lapchinda, W.
  **Group Divisible Designs with Two Association Classes and λ <sub>2</sub> = 5**, submitted

- Chaiyasena, A., Pabhapote, N.
  **Group divisible designs with two associattion classes and λ <sub>2</sub> = 3**

- El-Zanati, S.I., Punnim, N., Rodger, C.A.
  **Gregarious GDDs with two associate classes**

- Fu, H.L., Rodger, C.A.
  **Group divisible designs with two associate classes: N = 2 or m = 2**

- Fu, H.L., Rodger, C.A., Sarvate, D.G.
  **The existence of group divisible designs with first and second associates, having block size 3**

- Lapchinda, W., Pabhapote, N.
  **Group divisible designs with two associate classes and λ <sub>2</sub> = 1**

- Lindner, C.C., Rodger, C.A.
  (1997) *Design Theory*,

---

http://www.scopus.com/citation/print.uri?origin=recordpage&sid=&src=&stateKey=OFD_661670388&eid=2­s2.0­84869838952&sort=&clickedLink=&vie… 1/2
CRC Press, Boca Raton

- Pabhapote, N., Punnim, N.  
  **Group divisible designs with two associate classes and \( \lambda_{2} = 1 \)**  
  Article ID 148580

- Uiyyasathian, C., Lapchinda, W.  
  **Group divisible designs with two associate classes and \( \lambda_{2} = 2 \)**  

- Uiyyasathian, C., Pabhapote, N.  
  **Group divisible designs with two associate classes and \( \lambda_{2} = 4 \)**  