組合研討會

2013, 一月 30-31

國家理論中心 (南區), 國立成功大學

Schedule

	一月30（星期三）	一月31（星期四）
10:00–11:00		沈灝
11:00–12:00	張福基	賴欣豪
12:00–13:30	午餐	午餐
13:30–14:30	晏衛根	黃柏嶧
14:30–15:30	傅東山	討論時間
15:30–16:00	討論時間	
16:00–17:00	雷洪川	

List of Talks

1. (k, r)-colorings of complete graphs

沈灝—上海交通大學

Abstract. In this talk, we introduce known results and present some new progress on the problem of (k, r)-colorings of complete graphs.

2. Matchings, Trees and independent sets

晏衛根—集美大學

Abstract. Temperley (1974) found a bijection between spanning trees of the m×n square lattice and perfect matchings in the (2m−1) × (2n−1) square lattice with a corner removed. Burton and Pemantle (Ann. Probab., 1993) and Propp (1995) generalized this bijection to map spanning trees of general (undirected unweighted) plane graphs to perfect matchings of a related graph. Kenyon, Propp, and Wilson (EJC, 2000) extend this bijection to the directed weighted case. Gutman (Theoret. Chim. Acta, 1977) proved that, for a hexagonal chain H, there exists a related caterpillar tree T(*H*) such that there exists a bijection between perfect matchings of and matchings of T(*H*). In this talk, we will introduce these two bijections and some of their applications.

3. Dimer coverings on random multiple chains of planar honeycomb lattices

張福基—廈門大學

Abstract. Stimulated by the widely existence of benzenoid hydrocarbons and the produce of two-dimensional material graphene. We consider a particular random planar honeycomb lattice model whose samples existed in the real would. The growth procedure of the model is inspired by the growth of single walledgraphene

zigzag nanotubes. In our knowledge this random model is the first one whose sample is existed in the real world. (Joint work with Haizhen Ren and Jianguo Qian).

4. Weighted-1-antimagic graphs of prime power order

黃柏嶧—成功大學

Abstract. We say G is weighted-k-antimagic if for any vertex weight function w: V to N, there is an injection f : E $\rightarrow$ {1, 2,...,|E|+ k } such that for any two distinct vertices u and v, $\sum_{e\in E(v)} f(e) + w(v)$ not equal to $\sum_{e\in E(u)} f(e) + w(u)$. In our paper, by restricting to graphs of prime prime order, we improve this result in two directions: if G has odd prime power order p^z and has total domination number 2 with the degree of one vertex in the total dominating set not a multiple of p, then G is weighted-1-antimagic. If G has odd prime power order and has maximum degree at least $|V(G)| - 3$, then G is weighted-1-antimagic.

5. Some results on sign-balance of restricted permutations

傅東山—屏東商業技術學院

Abstract. TBA.

6. The Hamilton-Waterloo Problem for odd cycles factors

雷洪川—國立交通大學

Abstract. The Hamilton-Waterloo problem is a generalization of the well known Oberwolfach problem, which asks for a 2-factorization of the complete graph K_n in which r of its 2-factors are isomorphic to a given 2-factor R and s of its 2-factors are isomorphic to a given 2-factor S with $2(r + s) = n-1$. In this talk I will introduce our recent work on the Hamilton-Waterloo problem when the given 2-factors R and S are consisted of odd cycles.

7. Results on acyclic list edge coloring of graphs

賴欣豪—高雄師範大學

Abstract. A proper k-edge coloring of a graph is said to be acyclic if any cycle is colored with at least three colors. An edge-list L of a graph G is a mapping that assigns a finite set of positive integers to each edge of G. An acyclic edge coloring phi of G such that $\emptyset$ (e) in $L(e)$ for any e in $E(G)$ is called an acyclic L-edge coloring of G. A graph G is said to be acyclically k-edge choosable if it has an acyclic L-edge coloring for any edge-list L that satisfies $|L(e)| \geq k$ for each edge e. The acyclic list chromatic index is the least integer k such that G is acyclically k-edge choosable. In this talk, I will present some results on a joint work with professor Ko-Wei Lih.