

## [P13] Mining Consonant Module Structures of Giant Scale Graphs

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Various algorithms based on diverse measures have been suggested for mining communities in networks. Only a few of them, however, can be practically used for large scale networks and nevertheless suffer from inconsistent outcomes. We observe that approximately 40% of nodes in two social networking sites, Orkut and Cyworld with heterogeneous community size distributions, are grouped into communities in inconsistent ways in contrast to the results of other data by using our iterative reinforcing method. To find out the cause of the inconsistency, we applied our method to all the possible connected graphs up to the number of 9 nodes. We also obtain "modularity landscape" of all the possible community partitions in a specific 8 nodes network to see how our reinforcing method quantitatively advances. Finally, we compare our method with a modularity-free hierarchical link clustering method and discuss its validity and limitation.

### References

- [1] S. Moon, J. You, H. Kwak, D. Kim, H. Jeong, COMSNETS 2010, January 2010, Bangalore, India.