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**Special Issue on Selected Papers from the  
Thirteenth International Symposium on  
Graph Drawing, GD 2005**

**Guest Editor's Foreword**

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This issue of Journal of Graph Algorithms and Applications includes fully developed journal papers arising out of a selection of highly-ranked papers presented at the *13th International Symposium on Graph Drawing* held in Limerick, Ireland in September 2005. These seven papers were invited for publication based on their relevance to the aims of JGAA. They all have gone through the standard refereeing process of JGAA to ensure high publication standards.

The paper *Dynamic Spectral Layout with an Application to Small Worlds* by Brandes, Fleischer and Puppe investigates how the eigenvectors of a graph's Laplacian matrix may be used to visualise incremental changes to a graph. They focus particularly on dynamic changes to the class of graphs known as small-world graphs.

Hachul and Jünger, in their paper, *Large-Graph Layout Algorithms at Work: An Experimental Study* perform a thorough experimental study of several of the most popular algorithms for laying out very large graphs. Their methods are chosen from the two main algorithm camps, force-directed methods and spectral, or linear algebra, methods. They conclude their paper with recommendations for how one might proceed when faced with the task of visualising a very large graph.

Hong, Nikolov and Tarassov propose a  $2\frac{1}{2}$ -D method of visualising graphs based on the Sugiyama framework. In their paper, *A 2.5D Hierarchical Drawing of Directed Graphs*, they use the notion of parallel walls to reduce some of the clutter that edge crossings can cause when drawing a DAG according to the Sugiyama framework.

In *Effects of Sociogram Drawing Conventions and Edge Crossings in Social Network Visualization* by Huang, Hong and Eades, a user study is performed to examine the effects of different spatial layouts of sociograms on human perception. The study uses both quantitative and qualitative methods. Like the earlier experimental study guidelines for the presentation of sociograms are suggested.

Lin and Yen investigate the drawing style known as *balloon drawings* in *On Balloon Drawings of Rooted Trees* for the drawing of rooted trees. Angular resolution and aspect ratio are two of the aesthetics they address for unordered trees; in the case of certain ordered trees they develop efficient algorithms for optimizing these aesthetics.

Noack, in his paper *Energy Models for Graph Clustering*, develops a method similar to force-directed methods of graph layout for identifying clusters in a graph. One refinement of his method allows for edge-based repulsion. The merit of the approach can be judged by the identification of certain geographically-based clusters in one of the examples presented with no prior spatial information provided.

Finally, in *Drawing graphs using modular decomposition*, Papadopoulos and Voglis present and discuss an algorithm for drawing an undirected graph based on the modular decomposition tree of a graph. Grid- and circular-placement – two popular methods – are used along with a modified spring embedder algorithm in order to achieve pleasing layouts.