Stirling numbers and Bell numbers for graphs

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(joint work with Gábor Nyul)

Let G be a simple graph. A partition of $V(G)$ is called independent if each block is an independent vertex set. Then the Stirling number of the second kind $\left\{ {G \atop k} \right\}$ and the Bell number B_G for the graph G is defined to be the number of independent partitions into k subsets and the number of all independent partitions, respectively. In our talk we study the properties of these numbers.

We determine Stirling numbers of the second kind and Bell numbers for several well-known graphs. Applying the general properties for a special graph, we have an alternative way to achieve the so-called r-Stirling numbers of the second kind and r-Bell numbers.

References

[1] Zs. Kereskényi-Balogh, G. Nyul, Stirling numbers of the second kind and Bell numbers for graphs, submitted.