1092-05-35 **David Galvin*** (dgalvin1@nd.edu), University of Notre Dame, Notre Dame, IN. *Stirling numbers of graphs, and the normal ordering problem.*

The Stirling number of the second kind $\left\{ {n \atop k} \right\}$ counts the number of partitions of a set of size n into k non-empty sets. A graph theoretic interpretation of this quantity — the number of partitions of the empty graph of order n into k non-empty independent sets — admits an obvious generalization to arbitrary graphs. A more analytic interpretation — the coefficient of x^k in the polynomial $p(x)$ defined by $\left(x\frac{d}{dx}\right)^n e^x = p(x)e^x$ — also admits a natural generalization, with $\left(x\frac{d}{dx}\right)^n$ replaced by an arbitrary word in the alphabet $\{x, d/dx\}$. This latter generalization is the *Weyl algebra normal ordering problem.*

I'll show how these two generalizations are closely related, and give a simple graph theoretic answer to the normal ordering problem. In part joint work with J. Engbers and J. Hilyard. (Received August 01, 2013)