1107-05-288   **Michael H Albert**, **Mike D Atkinson**, **Cheyne Homberger***
(`cheyne.homberger@gmail.com`) and **Jay Pantone**. *Deflatability of Permutation Classes.*

Simple permutations can be considered the building blocks of permutation classes, and have been at the heart of many recent advances in the area. Classes which have resisted analysis for years have been fully enumerated with the following approach: first investigate the set of simples in the class, then use this structure to generate and describe the full class. This approach relies on the idea that the set of simples within a class is easier to understand than the class itself. This idea, however, proves false for many classes.

We say that a class C is *deflatable* (to its simples) if the smallest class containing the simples of C is a proper subclass of C. Equivalently, a class C is non-deflatable if every permutation $\pi \in C$ is contained within a simple of C. For example, the class of permutations avoiding the pattern 132 is deflatable, while the class avoiding the pattern 123 is not.

In this talk we explore the notion of deflatability. We establish theorems which guarantee the non-deflatability of certain families of principal classes, show that there are infinitely many principal classes of each type, and provide examples of each. (Received January 17, 2015)