Containers and list colourings

A set of containers for of a hypergraph is a collection of vertex subsets, called containers, such that every independent set is in a container, no container is very big, and the number of containers overall is small. We review briefly the properties of containers and indicate some newer and more direct approaches to their construction.

One of the first applications of containers was to the list colouring of hypergraphs. In joint work with Ares Meroueh, we describe new bounds on the number of colours required, suggesting that the container method, though very effective for this problem, is still not optimal.