We will explain in detail the concept of deforming a polytope. With that in hand we can consider the set of all possible deformations. This set can be given the structure of a polyhedral cone and in some concrete examples it can be computed explicitly. A particular example of interest is the case of root systems, highly symmetric structures. No previous knowledge of any of these topics will be assumed. This joint work with F. Ardila, C. Eur and A. Postnikov