The group of volume preserving diffeomorphisms, the group of symplectomorphisms and the group of contactomorphisms constitute the classical groups of diffeomorphisms. The first homology groups of the compactly supported identity components of the first two groups have been computed by Thurston and Banyaga, respectively. In this talk we present a solution of the long standing problem on the algebraic structure of the third classical diffeomorphism group, i.e. the contactomorphism group. Namely we show that the compactly supported identity component of the group of contactomorphisms is perfect. In view of Epstein's theorem it is simple as well.

The above results hold in the C^∞ category. However, analogous perfectness theorems for the contactomorphism groups of class C^r are also valid for r large (by the presented method) and for r small (in view of recent results of Tsuboi). Possible applications to Haefliger's classifying spaces of contact foliations are indicated.