1096-14-890 **Mounir Nisse*** (mounir.nisse@gmail.com), Max Planck Institute for Mathematics, Vivatsgasse 7, 53111 Bonn, Bonn, Germany, and **Frank Sottile** (sottile@math.tamu.edu), Department of Mathematics, Texas A&M University, College Station, TX 77843-3368. *Arrangement of tori and the topology of coamoebas complement of algebraic varieties.*

Amoebas (resp. coamoebas) are the image under the logarithmic (resp. argument) map of algebraic (or analytic)varieties of the complex algebraic torus. they inherit some algebraic, geometric, and topological properties of the variety itself. First, in the hypersurfaces case, we define a subset of the real torus called the *shell* of the coamoeba, with boundary contained in an arrangement of codimension one tori. Then, we show that the number of complement components of a coamoeba is bounded by the number of complement components of its shell. More precisely, we prove the following:

$$\#\{(S^1)^n \setminus \overline{co\mathcal{A}(V)}\} \leq \#\{(S^1)^n \setminus \mathcal{H}(V)\} \leq n!\mathrm{Vol}(\Delta),$$

where Δ is the Newton polytope of the defining polynomial of the hypersurface V. If the codimension k is greater than one, then we show that the coamoeba contains an arrangement of $(n-k)$-dimensional tori which has some algebraic, geometric, and topological properties inherited from the original variety itself. (Received September 11, 2013)