1086-14-604 **Mounir Nisse*** (`nisse@math.tamu.edu`), Department of Mathematics, Texas A&M University, College Station, TX 77843-3368, and **Frank Sottile** (`sottile@math.tamu.edu`), Department of Mathematics, Texas A&M University, College Station, 77843-3368. *The generalized order map, and k-convexity of the (co)amoeba complement components.*

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, we show a stronger version of Henriques convexity for amoebas and coamoebas, which complete the generalization of the k-convexity of the amoeba complement in higher codimension. Thus if $V \subset (\mathbb{C}^*)^n$ is a k-dimensional algebraic variety with amoeba $\mathcal{A}$ and coamoeba $co\mathcal{A}$, and $\pi \subset \mathbb{R}^n$ (resp. $\tau \subset (S^1)^n$) be a $(n-k)$-dimensional plane (resp. torus), then we the following maps

$$H_{n-k-1}(\pi \cap (\mathbb{R}^n \setminus \mathcal{A}), \mathbb{Z}) \to H_{n-k-1}((\mathbb{R}^n \setminus \mathcal{A}), \mathbb{Z})$$

$$H_{n-k-1}(\tau \cap ((S^1)^n \setminus \overline{co\mathcal{A}}), \mathbb{Z}) \to H_{n-k-1}(((S^1)^n \setminus \overline{co\mathcal{A}}), \mathbb{Z})\,)$$

are injective. Also, we define an order mapping in higher codimension,

$$H_{n-k-1}(\mathbb{R}^n \setminus \mathcal{A}, \mathbb{Z}) \to H^k((\mathbb{C}^*)^n, \mathbb{Z})$$

which generalize the one already defined in the hypersurface cases. (Received September 08, 2012)