

Cluster set theorems for H^∞ functions
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Let $D = \{z \in \mathbb{C} \mid |z| < 1\}$ and let $H^\infty(D) = \{f : D \rightarrow \mathbb{C} \mid f \text{ is bounded and analytic on } D\}$. Let $\mathcal{M}(D) = \{\varphi : H^\infty(D) \rightarrow \mathbb{C} \mid \varphi \text{ is a homomorphism}\}$. Fix $f \in H^\infty(D)$ and a point $e^{i\theta}$ on the boundary of D . A *Cluster Set Theorem* is a result that relates the collection of limiting values of $f(z)$ as $z \rightarrow e^{i\theta}$ to the values of $\varphi(f)$, $\varphi \in \mathcal{M}(D)$.

We will review a classical cluster set theorem, showing its relation to the Carleson Corona Theorem, and then describe recent research (by D. Carando, T. Gamelin, S. Lassalle, M. Maestre, and myself) on what happens if D is replaced by the open ball of a complex Banach space.