1070-46-74 **Richard M Aron*** (aron@math.kent.edu), Department of Mathematics, Kent State University, Kent, OH 44242. *Cluster Value Theorems for Banach algebras of analytic functions on the ball of a Banach space.*

We report on joint work with D. Carando, T. W. Gamelin, S. Lassalle, and M. Maestre.

Let $B$ be the open unit ball of a complex Banach space $X$. In analogy with the standard setting, we let

$$H^\infty(B) = \{f : B \to \mathbb{C} \mid f \text{ is analytic and bounded on } B\},$$

and

$$A_u(B) = \{f : B \to \mathbb{C} \mid f \text{ is analytic and uniformly continuous on } B\}.$$

Both are Banach algebras with the sup norm. Let $\mathcal{A}$ be either algebra and set

$$\mathcal{M}(\mathcal{A}) = \{\varphi : \mathcal{A} \to \mathbb{C} \mid \varphi \text{ is a homomorphism}\}.$$

In the classical context, I. J. Schark proved the following cluster value theorem, which in fact is a weak version of the Corona Theorem: For a fixed $f \in H^\infty(D)$ and a fixed point $z_0 \in \overline{D}$,

$$\{w \in \mathbb{C} \mid \exists (z_n) \subset D \text{ such that } z_n \to z_0 \text{ and } f(z_n) \to w\} = \{\varphi(f) \mid \varphi(z) = z_0\}.$$

We describe a cluster value theorem in infinite dimensional context, extending Schark's result to certain Banach spaces such as $X = c_0$ and $X = \ell_2$. (Received January 25, 2011)