1056-41-1310 **Mohammad A AlQudah*** (alqud1ma@cmich.edu), Department of Mathematics, Mount Pleasant, MI 48859, and **James R Angelos** (james.angelos@cmich.edu), Department of Mathematics, Mount Pleasant, MI 48859. *Local Lipschitz Constant for Vector Valued Approximation.* Preliminary report.

Let X be a compact Hausdorff space and $C(X, \mathbb{R}^k)$ be the space of vector valued continuous functions from X to $k-$dimensional Euclidean space $\mathbb{R}^k$.
The best approximation in $C(X, \mathbb{R}^k)$ for $k \geq 2$ is fundamentally different from the best approximation in $C(X, \mathbb{R})$ where Lipschitz continuity of order one and strong uniqueness of order one are essentially equivalent.

We present a formula for the local Lipschitz constant for uniform approximation of f on a discrete subset X of $[-1, 1]$ from a generalized Haar subspace of dimension n in $C(X, \mathbb{R}^k)$, under the restriction that X has exactly $n + 1$ points. (Received September 21, 2009)