1127-47-328 **Marie-Jose Saad*** (mariejose@wustl.edu). *Weak Factorization of the Hardy space $H^p(\mathbb{R}^n)$ in the multilinear setting, for $\frac{n}{n+1} < p < 1$.*

In 1976, Coifman, Rochberg and Weiss presented a weak factorization result of the Hardy Space $H^1(\mathbb{R}^n)$ through commutators. In 1981, Uchiyama proved a factorization of $H^p(\mathbb{R}^n)$ in the space of homogeneous type, for $p < 1$. In this talk, we extend Uchiyama's method and provide a proof of the weak factorization of $H^p(\mathbb{R}^n)$ in the multilinear setting, for $\frac{n}{n+1} < p < 1$. As an application, we obtain a characterization of the boundedness of the commutator $[b, T]$ from $L^{r_1}(\mathbb{R}^n)$ x ... x $L^{r_m}(\mathbb{R}^n)$ to $L^{q'}(\mathbb{R}^n)$, where $b \in \mathrm{Lip}_\alpha(\mathbb{R}^n)$, and $\frac{\alpha}{n} = \frac{1}{p} - 1$. (Received February 06, 2017)