1067-35-1130 **Wenxiong Chen*** (wchen@yu.edu), Department of Math, Yeshiva University, 2495 Amsterdam Avenue, New York, NY 10033, and **Congming Li**. *Symmetry of Solutions for Nonlinear Integral and PDE Systems.*

In this talk, I will introduce the integral form of the method of moving planes and its applications, mainly in establishing symmetry for solutions of integral equations and systems as well as PDEs due to the equivalences between the two. This method is quite different from the traditional ones for PDEs. Instead of using maximum principles, some global norms are estimated. It can be applied to obtain radial symmetry for positive solutions of the fully nonlinear integral systems involving Wolff potentials:

$$\begin{cases} u(x) = W_{\beta,\gamma}(v^q)(x), & x \in R^n; \\ v(x) = W_{\beta,\gamma}(u^p)(x), & x \in R^n; \end{cases} \tag{1}$$

where

$$W_{\beta,\gamma}(f)(x) = \int_0^\infty \left[\frac{\int_{B_t(x)} f(y)dy}{t^{n-\beta\gamma}} \right]^{\frac{1}{\gamma-1}} \frac{dt}{t}.$$

In a special case when $\beta = \frac{\alpha}{2}$ and $\gamma = 2$, system (1) reduces to an integral system with Reisz potentials, which is equivalent to a system of PDEs. In particular, when $\alpha = 2$, it becomes the well-known Lane-Emden system. (Received September 19, 2010)