1142-35-19 **Hongjie Dong**, 182 George Street, Providence, RI 02912, and **Tuoc Phan***
(phan@math.utk.edu), 1403 Circle Drive, Knoxville, TN 37996. *Mixed-norm regularity estimates for non-stationary Stokes systems with singular VMO coefficients and applications.*

We discuss about non-stationary Stokes systems with unbounded measurable coefficients. We prove mixed-norm Sobolev estimates for solutions assuming that the coefficients have small mean oscillations with respect to the spatial variable in small cylinders. As a special case, the results imply Caccioppoli's type estimates for the Stokes systems with variable coefficients. A new ϵ-regularity criterion for Leray-Hopf weak solutions of Navier-Stokes equations is also obtained as a consequence of our regularity results, which in turn implies some borderline cases of the well-known Serrin's regularity criterion. This talk is based on the joint work with H. Dong (Brown University). (Received August 02, 2018)