Statistic fluid dynamic of multiphase flow\textsuperscript{1} HYUNKYUNG LIM, JAMES GLIMM, YIJIE ZHOU, XIANGMIN JIAO, Stony Brook University — We study a turbulent two-phase fluid mixing problem from a statistical point of view. The test problem is high speed turbulent two-phase Taylor-Couette flow. We find extensive mixing in a transient state between an initial unstable and a final stable configuration. With chemical processing as a motivation, we estimate statistically surface area, droplet size distribution and transient droplet duration.

\textsuperscript{1}This work is supported in part by the Nuclear Energy University Program of the Department of Energy, Battelle Energy Alliance LLC 00088495.