1125-74-1067 **Yue Chen*** (ychen5@aum.edu), Auburn University at Montgomery, Department of Mathematics and Computer Scienc, 310S Goodwyn Hall, Montgomery, AL 36064, and **Chi-Sing Man** and **Kazumi Tanuma**. *Inverse problems related to monitoring depth profile of residual stress via Rayleigh-wave dispersion.*

In this talk, the inverse problem is to investigate the possibility of using Rayleigh waves to monitor the retention of the protective prestress during the lifetime of a structural component. The solution of the inverse problem is based on the direct problem to determine dispersion curves for Rayleigh waves propagating in various directions when the material parameters, texture coefficients, and initial stresses are given. We can infer the depth profiles of the residual stresses which are good approximations to the real ones. (Received September 14, 2016)