1153-60-30 **M. M. Rao*** (rao@math.ucr.edu). *Stochastic Equations.*

This talk refers to (i) difference and (ii) differential equations. In the early studies, H. B. Mann and A. Wald studied nth order, n a natural number, linear stochastic difference equations (having constant coefficients) with character roots in the unit circle. This work was extended by T.W. Anderson, when all roots are outside the unit circle. I studied the problem, when one root is outside and the rest are inside the unit circle and later on the circle. The computations are different in all cases and messy.

The corresponding studies for integral equations are useful in Physics and S. Kakutani suggested that I study these. When I started at Carnegie Mellon University on this question, first R. Borchers studied the first-order case and then, J. Goldstein, studied the higher-order (both nonlinear) cases. Their works (which started on my suggestion) led us to consider harmonizable processes and their structural analysis. The latter and related works and extensions will appear in my latest monograph "Stochastic Processes: Harmonizable Theory" which is expected to appear soon. I shall discuss these problems in my talk. (Received August 15, 2019)