IASSAR - SC2 on STOCHASTIC DYNAMICS
State-of-Art Review

Abstract for topic 1:
Applications of Probabilistic Structural Dynamics in Engineering

by Y. K. Wen (7/15/99)

Probabilistic structural dynamics covers a wide spectrum of topics including stochastic process, random vibration, and modeling of stochastic loads and structural response including simulation. Since the early introduction of this mathematical tool in various fields of engineering by notables such as S. Crandall, M.S. Longuet-Higgins, and A. G. Davenport, there have been many success stories, e.g., in wind engineering, ocean engineering and aerospace and aeronautical engineering. The best known are the random vibration based design code procedures for wind and wave loads. In more recent years, however, there has been a perception that the research in this area has outpaced applications and there is an increasing communication gap between researchers and practitioners. It is may be due to the lack of effort on the part of the researchers to advertise their new methods and cast their results in a form more suitable for industrial applications. It may also simply be due to the fact that successful applications have not made known to people of interest. It is therefore proposed in this state-of-art review effort to bring out new methods and results that are suitable to engineering applications and show case examples of successful applications that we are aware of. The bottom line is of course that we should try to "sell" our ware to users; otherwise, we will end up just talking to each other for the foreseeable future. This is just one man's opinion to open up a channel of communication. Committee members are encouraged to put on your thinking hat and make comments, suggestions, and contributions in this effort. Let's use the e-mail for this purpose so everybody knows what is going on.