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Tyrone E. Duncan*, duncan@ku.edu. *Stochastic Systems with Rosenblatt Processes.*

Rosenblatt processes are a family of continuous non-Gaussian processes that have a long range dependence and have a developing stochastic calculus. Some ergodic problems of stochastic control and differential games for linear equations, quadratic cost criteria, and additive control strategies are formulated and explicitly solved. These results seem to be the first explicit solutions of such problems that are not amenable to the well-known optimization methods of stochastic maximum principle or Hamilton-Jacobi-Bellman equations. Some stochastic calculus for these solutions is described such as a change of variables (Ito) formula. Rosenblatt processes can be viewed as a non-Gaussian generalization of fractional Brownian motions and should have application to modeling problems where a Gaussian assumption is not appropriate. Some of this work is joint with P. Coupek, B. Maslowski, and B. Pasik-Duncan. (Received January 08, 2021)