



## A First and Second Order Moment Approach to Probabilistic Control Synthesis

By -

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 38 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. This paper presents a robust control design methodology based on the estimation of the first two order moments of the random variables and processes that describe the controlled response. Synthesis is performed by solving a multi-objective optimization problem where stability and performance requirements in time- and frequency domains are integrated. The use of the first two order moments allows for the efficient estimation of the cost function thus for a faster synthesis algorithm. While reliability requirements are taken into account by using bounds to failure probabilities, requirements related to undesirable variability are implemented by quantifying the concentration of the random outcome about a deterministic target. The Hammersley Sequence Sampling and the First- and Second-Moment-Second-Order approximations are used to estimate the moments, whose accuracy and associated computational complexity are compared numerically. Examples using output-feedback and full-state feedback with state estimation are used to demonstrate the ideas proposed. This item ships from La Vergne, TN. Paperback.



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