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## THE GROWTH CURVE MODEL WITH AN AUTOREGRESSIVE COVARIANCE STRUCTURE

Y. FUJIKOSHI<sup>1</sup>, T. KANDA<sup>2</sup> AND N. TANIMURA<sup>3</sup>

<sup>1</sup>Department of Mathematics, Hiroshima University, Hiroshima 734, Japan <sup>2</sup>Hiroshima Institute of Technology, Miyake, Saeki-ku, Hiroshima 731-51, Japan <sup>3</sup>Sasebo-Minami High School, Hiu-cho, Sasebo 857-11, Japan

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Abstract. The growth curve model with an autoregressive covariance structure is considered. An iterative algorithm for finding the MLE's of the parameters in the model is presented, based on the modified likelihood equations. Asymptotic distributions of the MLE's are obtained when the sample size is large. A likelihood ratio statistic for testing the autoregressive covariance structure is presented.

Key words and phrases: Growth curve model, autoregressive covariance structure, MLE's, asymptotic distributions, likelihood ratio statistic.