

# APPLICATION OF TIME SERIES ANALYSIS AND MODERN CONTROL THEORY TO THE CEMENT PLANT

S. HAGIMURA<sup>1</sup>, T. SAITOH<sup>2</sup> AND Y. YAGIHARA<sup>3</sup>

<sup>1</sup>*Chichibu Cement Co., Ltd., 794-6, Chichibu-city, Saitama 368, Japan*

<sup>2</sup>*Chichibu Cement Co., Ltd., 5310, Mikajiri, Kumagaya-city, Saitama 360, Japan*

<sup>3</sup>*System Sougoh Kaihatsu Co., Ltd., 1-28-23, Hongou, Bunkyo-ku, Tokyo 113, Japan*

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**Abstract.** Cement plant process is full of internal noise sources and feedback loops. Therefore, statistical approach is required to understand its dynamic characteristics. Time series analysis has been applied to some important subprocesses of a cement plant process. These are the vertical mill process, calcining process and clinker cooling process. Based on the AR models of these, a set of optimum controllers have been designed by modern control theory. Successful results of application are reported in this paper. A method of determining optimal production level is also discussed.

*Key words and phrases:* Time series analysis, identification, control, cement plant process.