

# Applying Non-stable Time Series Model to Forecast the Groundwater Dynamic Variation in the Well-Irrigated Rice Area in Sanjiang Plain

Qiang Fu<sup>1,2</sup>, Wei Zu<sup>3</sup>

(1. Doctoral Working Station of Beidahuang Company, Total Bureau of Agricultural in Heilongjiang, Harbin Heilongjiang 150040, China; 2. School of Water Conservancy & Civil Engineering, Northeast Agriculture University, Harbin Heilongjiang 150030, China; 3. School of Agriculture, Northeast Agriculture University, Harbin, Heilongjiang 150030, China)

### Abstract :

Groundwater shortage has become a very serious problem in Sanjiang Plain. More and more so-called "funnels" and "hanging pumps" situations occurred due to water shortages. The overall trend of groundwater level has decreased continually over the years. In this study, the Chuang Ye Farm in Jian San Jiang Department was taken as an example to develop a non-stable time series random model by applying the random analysis method. The model was used to simulate the dynamic variation and forecast the trend in the future. This study aims to provide a better understanding for the sustainable development of agriculture and use of groundwater resources. [Nature and Science. 2004;2(3):55-61].

### Key Word :

non-stable time series model; well-irrigated rice; groundwater; Sanjiang Plain

*Volume 2, Number 3, October 2004, ISSN 1545-0740*