12. A Study on the Development and Application of Fuzzy Evaluation Algorithm to Complex System

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The evaluation structure of complex system is composed of multiple attributes and hierarchies. Many studies have been done based upon the assumption that the evaluation elements were independent. The actual evaluation structure of complex system, however, has complexity, ambiguity and inter-linkage among the elements. In this regard, the fuzzy evaluation process is well known to be effective way with which the complex system can be dealt.

The main objective of this study is to develop the Fuzzy Evaluation algorithm to Complex System(FECS) which can be universally adapted to the complex system by both enhancing the existing fuzzy evaluation process and solving the problems in evaluation procedures by MDMC. This study also aims to confirm the effectiveness of FECS by applying to the evaluation of national maritime power system. These were fulfilled, first of all, by suggesting the framework of which the multiple hierarchical evaluation structure system can be efficiently composed, and identifying the superiority of fuzzy measure to linear measure.