MULTI-AGENT SYSTEM COMPUTING AND SIMULATION OF INTER-BASIN WATER TRANSFER

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ABSTRACT—The South-to-North Water Diversion Eastern Route Project (SNWDERP) of China is a large inter-basin water transfer project. It is an extremely complex process management of water resources allocation and scheduling for such a multi-basin, multi-source, multi-objective complex engineering systems. The SNWDERP is difficult to accurately construct the mathematical model because this kind of complex system has natural and artificial quality in the same time. This paper proposes a model for the SNWDERP based on multi-Agent calculation and complex adaptive system (CAS). Experiments are conducted on the SWARM simulation platform. Simulation results show that the interaction within all kinds of objects and the behaviour of system evolvement in the course of water resources allocation and scheduling is effective.

Key Words: multi-Agent, complex adaptive systems, water resources allocation and scheduling, system simulation, inter-basin water transfer