The interaction of game using computer

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Now, there are many kind of games, such as a sport and a board game. In it, the game through a network produced by progress of an information technology, an "online game". There are two group that called "Stronger in face to face game" and "Stronger in online game" in the player of the genre. For example,in mah - jongg,"Stronger in face to face game" opposed to what has the sharp insight which perceives the present condition and reads a place and "Stronger in online game" are the group of theorists which strikes and dislikes in a line views which thought efficiency as important, such as an element of its luck and a flow on that occasion. I think that this difference is what occurs by the difference in how to treat information. "Stronger in face to face game" are guess from many information which exists in a place, it cannot exert its strength in the scene where the information of net mah-jongg, including a partner's face and the air of a place, is insufficient. Conversely, although the "Stronger in online game" can act according to its idea calmly in a scene only with the required amount of information, in the scene which faced the field with reality, with the increase of information, thinking will get confused and an unexpected mistake will occur. Thus, it is known that the strength of a player will change in the game through a computer. However, the concrete factor is not known although it can feel by a physical feeling that the strength of a player changes with environment. Moreover, when playing a match against Computer A.I., it is reported that the case where the pleasure of game ,

mental attitude and the game to a strategic difference changes in face-to-face game. In this paper, we considered why when a computer is passed, the strength of a player and change of a mental state arise by the visualizing flow of a game based on a game information dynamic model. Using this model, by assuming the flow of information particles , introduction of dynamic concepts, such as an information rate and information acceleration, is attained. By applying a proposal model to the game of shogi, "presence" under game can be evaluated and it can argue about play nature, a feeling of a thrill, etc. quantitatively. This time, we discover the difference between intelligence of a computer and human by using this model for the game of shogi. When human acquires the feature of the approach against a computer, and also game through a computer, it may become development of the future computer A.I. and reference of how human associates with the computer.

Chapter 1 explains the background for which this research was done, and the composition of this paper. A second chapter explains the game information dynamic model used in order to clarify resemblance or a difference of intelligence of human and computer. The game information dynamics devised as the technique of measuring thinking of human or a computer quantitatively based on hydrodynamics. The following chapter considers experimental data using Advantage, Winning rate, Certainty of game outcome, Potential energy, and Kinetic energy which this chapter defines and it explains. These can express the fun of the evaluation value of a game, the percentage of victories, the accuracy of a game, potential energy, kinetic energy, and also a game with time transition. In Chapter 3, the feature is acquired from human vs computer and a computer vs computer using a game information dynamic model not only the result of having opposed computers but based on the game data obtained by an experiment cooperating in the pro of two or more shogi actually. As a result, as for that man's change width of α or η is large, and a computer, it turned out that K E . is raised rapidly in the second half of a game. Moreover, while a possibility that T.P.E could become an index which measures man's strength was discovered, having a peculiar weak point which man does not have was too shown in the computer. In Chapter 4, it discusses about the consideration and analytical data which were obtained in Chapter 3. It argues

about why the characteristic of the experimental data obtained in Chapter 3 was acquired. And Chapter 5 describes development of a conclusion and future. Based on discussion of Chapter 4, we consider the feature of a computer, human's feature over the feature of a computer, and what kind of approach will be made to a computer by human.