

Relationship between the behavior of catfish and earthquakes - Application of the image analysis software

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Various physical/chemical phenomena have been reported to occur before EQs. Anomalies in seismic activity, geodetic and geochemical parameters, and electromagnetic phenomena are the examples. So-called macroscopic anomalies, such as lights, sound and anomalous behavior of animals have also been reported. Those are defined as the unusual phenomena that can be noticed without scientific instruments but by ordinary human sense. Although there have been a number of reports on such phenomena, sufficient scientific research has not been made.

There is the possibility that the catfish respond to pre-seismic electromagnetic phenomena, because the catfish has the high sensitivity electric organ. Therefore, we started in 2001 the research about the relationship between catfish activities and stimulative elements.

In this paper, we report our preliminary effort to try to record the behavior of a catfish quantitatively. We constructed a digital monitoring system by using a video camera in order to establish a classification method of the catfish's behavior.

We made a special aquarium(65cm*100cm*15cm) which has a low space(20cm*50cm*10cm). The catfish usually stays in the low space but sometimes come out from it to the high space. We analyzed the catfish's behavior on the high-space. The analysis period is 10 days from May 26 2004, during which the catfish came out 305 times. We succeeded in the calculating the locus and center of gravity of the fish, swimming speed, stagnation time by utilizing ScionImage of free image analysis software.

As a result, it became possible to analyze the catfish's behavior quantitatively. Analysis on plural catfishes for longer time is planned for future study.