

## Application of microbarograph for local weather observation

# Kazuhiro Umetani[1]; Satoshi Sakai[2]

[1] Earth Dynamics ,Human and Environment ,Kyoto Univ; [2] Human and Environ. ,Kyoto Univ

<http://www.mohicandevise.com>

The concern of peculiar weather to the city and the region has risen. In such the very local weather, it is personally a current state that the grasp of the weather phenomenon of the reality by the measurement has not caught up on the other hand still according to the development of the computer in recent years though it came to be able to target the simulation.

Especially, it is movement of air according to the phenomenon that the grasp by the measurement is difficult. The flow of air in a perpendicular direction like convection plays a major role in the phenomenon of a small scale though the anemometer is used to observe the movement of air usually. However, the velocity of the wind element of a perpendicular direction is smaller in general than that of the horizontal velocity of the wind and capturing the flow of the air related to the phenomenon of a small scale because it is difficult for the exclusion anemometer to capture the flow of the wind in a perpendicular direction is more difficult a part of anemometer.

It is possible to think about the means of measuring the pressure distribution to understand the flow of the air driven to convection etc. on the other hand. The flow of air might be able to be presumed by assuming the pattern of convection to be pressure distribution obtained in a certain section. Because power to treat easily comparatively because pressure is an amount of the scalar compared with the velocity of the wind and to hang to air will be measured directly, the advantage that it is easy to connect with the mechanism of the phenomenon is thought. It aimed to examine the structure of pressure in an actually small area because even the evaluation was not performed whether the measurement of pressure was effective in the observation of the local weather, to assume to be the final purpose, and to develop the technique for enabling such an observation in the phenomenon of the synoptic scale though the observation of pressure was very important.

It is very difficult to measure pressure absolutely for the observation of such pressure. It is known it has the high amplitude in the atmospheric pressure change at the length cycle, and has only the low amplitude very much for a very big phenomenon like the recurrence of the height atmospheric pressure by the atmospheric pressure change caused by the weather of the city scale that is a short cycle in general usually. Therefore, to measure the atmospheric pressure change by the weather phenomenon of the city scale with Okei absolutely, it will be demanded compared with very high S/N. On the other hand, a minute barometer attenuates the atmospheric pressure change at the length cycle, and because it is possible to record by the amplitude which the phenomenon at the length cycle and the phenomenon at a short cycle are almost near, is suitable for measuring the atmospheric pressure change in wideband.

The measured pressure fluctuation might be ..former atmospheric pressure change.. restorable because of a minute barometer though cannot compare directly because it is recorded through mechanical attenuation by a reverse-filter. Because this research establishes the technique of the restoration of the atmospheric pressure change with a reverse-filter from the above-mentioned viewpoint, and applied the object of the atmospheric pressure observation in the city weather, it introduces the result.