

Analysis of Sand Storm

~ Model experiment of kobe high school and Measures for sand storm ~

Hyogo Prefectural Kobe High School Sougourigaku Course

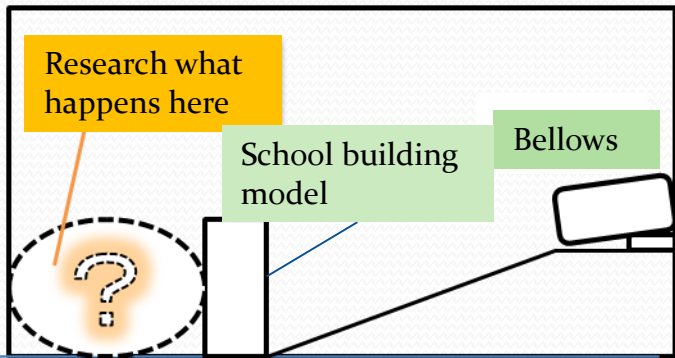
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1 < Incentives for this Research >

There is a phenomenon of that sand is gone from ground when we are at a the club activities. We think it is affected by the location of kobe high school. In this way, we decided we research.

2 < Summary >

At first , we did the preliminary experiment. And we observed the rough movement of wind. When we have predicted it ,we made a model. We worked out the measures from result of the experiment.



(diagram 1: experiment simplified)

3 < Main Experiment >

(ways) We added model of Mt.Rokko to the preliminary experiment's system and expanded whole experiment system. Also , we made the school building model equal ratio of real school building(3:10). (diagram 2)



(diagram 2: ratio of school building)

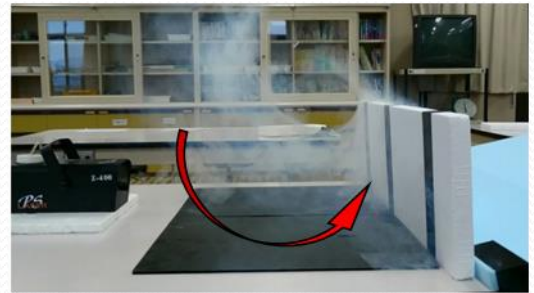


(diagram 3 :experiment system)

(result) There occurred similar whirl as preliminary experiment. But it occurred little above it.

< Conclusion >

Sand storm of kobe high school occurs **by building wind phenomenon and movement of wind that is surrounding school building.**



(diagram 4: flow of wind)

In main experiment, we expanded the model and made it equal ratio of real school building. Because of higher the height of it, the whirl occurred little upper than before. But except of it, **the flow of wind was same to preliminary experiment.**

4 < Definition of Building Wind >

A wind that it blows strongly around high buildings. Because of it is blocked by buildings ,it occurs locally. (Daijirin 3rd edition)

5 < Measures in Kobe High School >

• **Windbreak effect by planting trees**

The measure is to plant trees under the both sides of school building. As a result ,it is made sure of what there is an effect on windbreak by precedence research.

• **Windbreak effect by fence**

We build fences at the same spot of planting. As a result , it is known that fence effect is seen wind speed reduction effect like planting effect.

6 < Consideration >

According to the above , when the north wind blew to the kobe high school , we wonder sand storm causes by **wind between the buildings and swirling wind.** And we expect the reason why sands of northwest ground are gone is **to happen sand storm when some influence with a combination of upward wind and northern wind.** Accordingly , we think that why the ground near the building have smaller amount of sand.

< Reference literature >

<http://birukaze.blogdehp.ne.jp/category/1876431.html#fence>