You can see the frozen contents as they are. I thought "it's awesome!"

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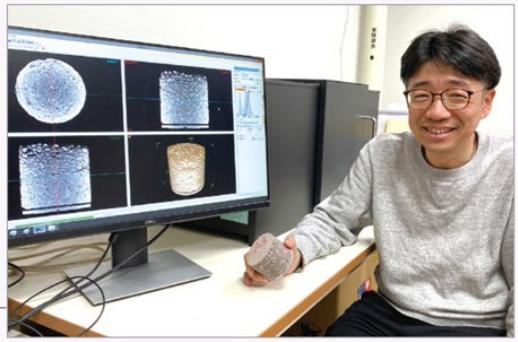


Research on Freeze-Thaw in Soil Pavement

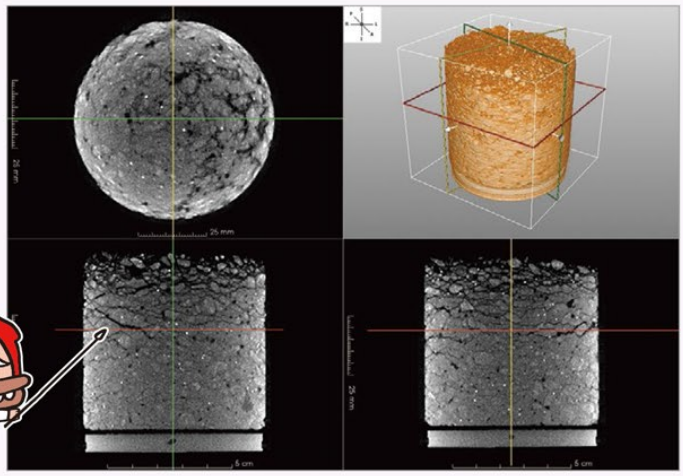
Soil pavement is a paving method that combines soil with cement as the material. It is softer than asphalt, making pedestrians easier to walk on, and its natural color blends well in parks and sidewalks.

However, in cold regions, there was a concern about frost damage causing cracks due to the expansion of water that penetrates the pavement and freezes.

Previously, we immersed test samples in water, repeatedly froze and thawed them, and then collected the broken pieces to see how much they had deteriorated. This method was time-consuming, and we couldn't observe the state while they were frozen.

By using CT, we can now observe the inside of the test sample while it's frozen, greatly advancing our research.

Compared to concrete and asphalt, soil pavement is more porous, allowing water to penetrate easily, which helps to control temperature rise. It doesn't become muddy like plain soil, making maintenance easier.



CT images: Observing the occurrence of cracks and delamination.

Immerse the test sample in water, freeze it, and take CT scans with the container.

Repeated experiments by changing the composition of soil and cement.

In the field of civil engineering, the ground below the surface is also a research target.

Knowing the density and condition of the soil is important for disaster prevention and constructing buildings and structures. I believe it would be helpful to collect samples from the ground using boring and observe them on site.

In the future, there may come a time when each civil construction site will have a CT machine.

Check out this data in a video