

Dirt may fine-tune weather forecasts

Study explores bevy of bits that trap, reflect heat

By David Fogarty
REUTERS

SINGAPORE — Studying the way glass and other brittle objects shatter can help scientists hone their weather forecasts and climate predictions, a study released Tuesday says.

The study found that tiny particles of dust, released into the air when dirt is broken apart, follow similar fragmentation patterns as glass.

Some particles of dust reflect solar energy, acting as cooling agents, while some trap extra heat.

For example, microscopic clay particles remain in the atmosphere for about a week, helping cool the atmosphere by reflecting heat from the sun back into space.

Key role

Dust plays a crucial climate role because it can affect the amount of the sun's energy absorbed by the atmosphere. Dust also can help with forming clouds and distributing nutrients, such as iron that is vital for plants.

Larger dust particles drop back to earth more quickly and tend to have a heating effect.

The trick is to figure out how much of each type is in the atmosphere. The better the estimate, the more accurate the forecast.

Jasper Kok of the National Center for Atmospheric Research in Boulder, Colo., said his work suggested there could be several times more dust particles in the atmosphere than previously estimated.

This is because shattered dirt appeared to produce a much larger number of dust fragments, a finding that challenges assumptions used in complex computer programs to forecast the weather and future climate.

This is particularly the case for desert regions such as North Africa, parts of Australia and the southwestern United States, where winds can whip up large amounts of nutrient-rich dust into the air and across the sea.

"As small as they are, conglomerates of dust particles in soils behave the same way on impact as a glass dropped on a kitchen floor," Kok said in a statement with the release of his study in the latest issue of the Proceedings of the National Academy of Sciences.

"Knowing this pattern can help us put together a clearer picture of what our future climate will look like," he added.

That is crucial for scientists using computer climate models to simulate the amount of dust particles in the atmosphere to figure out the heating or cooling effect.

Kok said his work suggested the amount of microscopic clay particles might be overestimated in many models.

"The idea that all these objects shatter in the same way is a beautiful thing, actually," Kok said in the statement. "It's nature's way of creating order in chaos."

More speed cameras possible

Balto. Co. councilman plans bill to lift limit of 15

By Steve Schuster

First District Baltimore County Councilman Tom Quirk said this week that he plans to introduce a speed camera bill in the council Jan. 3 that would lift a 15-camera limit in the county and also possibly redirect where citation revenue goes.

A draft of the bill has been distributed to members of the council, but some say they don't know yet if they'll support it. If the measure is introduced Jan. 3, it could face a council vote Feb. 7.

Legislation allowing speed cameras in Baltimore County passed in 2009 allows the county to place as many as 15 cameras in school zones around the county. The sites for the cameras are selected by the Baltimore County Police Department.

Quirk, a Democrat who represents Catonsville and Arbutus, said he wants to increase the number of cameras allowed, to extend the efforts in school zones to keep children safe.

"To me it's all about walkability and

keeping our kids safe," he said.

The bill is still a work in progress, but he said other provisions might include changing where the citation revenue stream flows.

Instead of having the citation revenue collected into a general county fund, "we might earmark [citation funds] toward schools or 'walkability,' but this is still being worked out," he said.

Jonathan Schwartz, senior council assistant to 2nd District Council member Vicki Almond, a Democrat who represents Pikesville, said although Almond's office has received a draft copy of the legislation, it's likely the language in the bill will change before being introduced. He said that to the best of his knowledge, Almond has not yet taken a position on the matter.

Fifth District Councilman David Marks, a Republican who represents Towson, Perry Hall and Loch Raven, said that speed cameras remain controversial, with many of his constituents split on the matter.

"One of the criticisms [of speed cameras is that] this is a cash cow for the county ... general fund," said Marks, who

added that he'd rather see the money used to benefit specific school safety issues, such as crossing guards.

Marks said he has not taken a formal position on the matter, but he expects that such a bill would pass. If it does, he said, he would like to see a change that would give the council, rather than the county police, the power to determine where speed cameras go.

Marks said he would like to see speed cameras used only in public school zones, and would like to "tighten the definition of what is a school zone."

"Is a day care a school zone?" he asked. Although opinion is divided on speed cameras, Marks said, "Tom [Quirk] is very interested in pedestrian safety and transportation, and has very good intentions to improve safety in our communities."

Third District Councilman Todd Huff, a Republican who represents the north county, says his office received a copy of the bill over the holidays but he has not yet had an opportunity to review the measure.

But he added, "I've never been a big fan of speed cameras."

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