

Birte Thiede: My name is Birte Thiede, and I am a researcher in the Cloud Kite Group at the Max Planck Institute for Dynamics and Self-Organisation here in Göttingen. In the Cloud Kite Group, we study clouds, winds and turbulence in the atmosphere. Today, students from Felix Klein Gymnasium are here to ask me some questions about our research.

Student: I have a question about the Cloud Kite: how is the balloon constructed and what is it used for?

Birte Thiede: The Cloud Kite balloon allows us to carry measuring instruments into the atmosphere. The cloud kite balloon is actually a mixture of a balloon and a kite. The balloon has an inner bladder that contains helium. And then the whole thing is combined with a sail. This combination of a helium balloon and a sail means that we can take measurements on both windless and very windy days.

Student: How much helium fits into a cloud kite?

Birte Thiede: The cloud kite balloon holds about 250 cubic metres of helium. That's about as much helium as would normally fit into 10,000 party balloons. So really a lot. And the helium then ensures that we have lift. Simply because helium is lighter than air. This causes the balloon to rise and carry itself, the line and the measuring instruments attached to the line.

Student: How do the measuring instruments measure and what do they measure?

Birte Thiede: The cloud itself is attached to the ground or sometimes to a ship with a rope and then we can attach various measuring instruments to the cloud, wind darts for example. We are interested in what wind, wind eddies and turbulence in the atmosphere look like. We measure this with our wind darts, of which we have ten. We can attach them to the rope at different heights and measure at different heights. Another thing we are very interested in is cloud measurements. That's why we have CloudKite and we use MPCK Plus and Hodo-Check instruments, which take optical measurements of cloud droplets. That way we can really take a close look at clouds.

Student: Where have you flown so far?

Birte Thiede: We have already taken measurements over the Atlantic Ocean with the CloudKite, and we have taken measurements in northern Finland. You can probably imagine that clouds look different over the ocean than they do in northern Finland, for

example. But it's also interesting for us when we can team up with other scientists and plan a measurement campaign together, meaning that we can take measurements together in one place. Then we can do different experiments and compare and share our data and results.

Student: Thank you, Birte. That was interesting. Thank you for answering our questions.

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