Poster

What does CO_2 look like? - Explaining Crystallography to elementary school kids with the “Maus” - one of Germany’s longest running science TV shows for kids.

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„Die Sendung mit der Maus“ (Maus) is an educational show on German public TV which has been running weekly since 1971. It targets elementary school children and features fun stories (Lachgeschichten) as well as educational stories (Sachgeschichten), which taught us what happens to waste water, how batteries are recycled and much more about how the world works. In German speaking countries, you will find millions of kids - and grown-ups - of every age fervently watching it every Sunday. In one of their recent videos about climate change, they showed a wrongly assembled molecular model of CO_2 which gave rise to opposition of crystallographers on the Maus’ social media. So, the Maus' team wondered how one can really know the shape of CO_2 and turned to us, asking for advice.

Note that, when producing their show, the quality levels of the Maus are extremely high: Sample preparation, data measurement and interpretation had to be performed in one go and the data measured during the recording had to be used for structure solution.

However, how could they best explain such a complex analytical method like single crystal XRD to the *6- to 10-year-old* target viewers of the Maus? After two intense brainstorming sessions, they indeed found a correct and child friendly way to explain X-ray diffraction without oversimplifying and provoking emails from the “older kids” who are familiar with scientific explanations of XRD.

The film was produced at the University of Mainz using Dr. D. Schollmeyer’s diffractometer and starring Dr. L. Carella conducting the crystallographic work.

Benefits of this documentary will go beyond the targeted elementary school children and may be used in educational teaching for all ages.

In the talk, we will introduce the challenge of scripting this Maus episode on XRD and show the resulting 10-minute video with English subtitles (Fig. 1) [1].

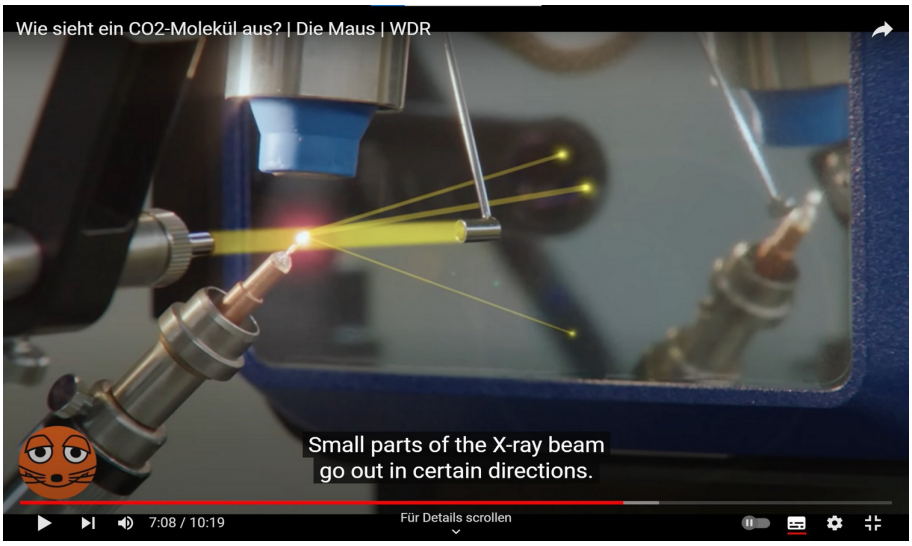

Figure 1. Screenshot from the video, making the X-ray primary and the diffracted beams visible. Video available on YouTube with automatic translation of subtitles.

[1] https://www.youtube.com/watch?v=TsMeXpBOJhY

We would like to acknowledge Dr. Luca Carella and Dr. Dieter Schollmeyer from the University of Mainz for agreeing to open their laboratory and participate in producing this video