

# The “Urknall Unterwegs” Module

A mobile particle physics exhibition in Germany

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22<sup>nd</sup> IPPOG Meeting, CERN, Geneva

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# How to reach people who slip through the cracks?

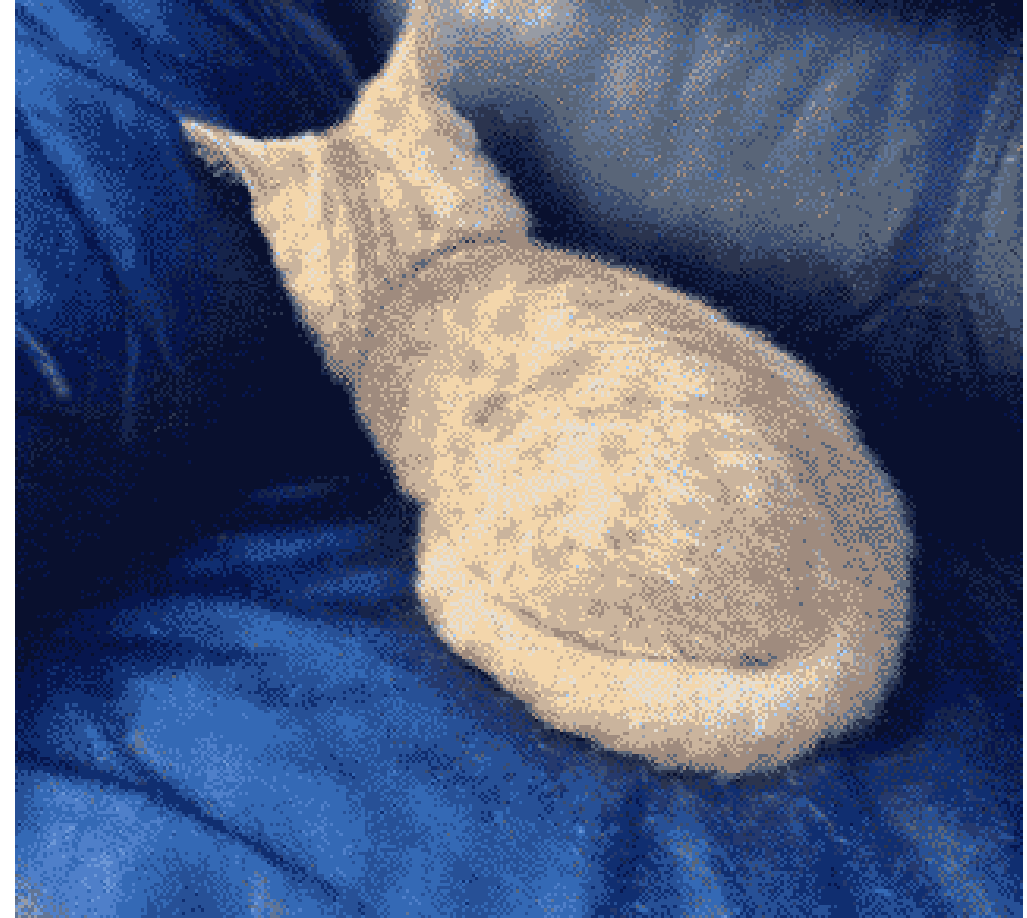
An issue for science institutes everywhere...

## Institutes ...

- Open their doors
- Make exhibits at museums
- Film documentaries about their research
- Try to induce press coverage about results

## This is a problem!

- We leave out the people who don't have an inherent interest in the subject to start with
- It's especially difficult with abstractions



**The solution: a mobile module!**

# The team

## KONTAKT/KONTAKT2

- Funded by German Federal Ministry for Education and Research
- Netzwerk Teilchenwelt – programme for science education and development of interested particle physics students in Germany
- Weltmaschine – press portal for LHC and particle physics in Germany (+ traveling exhibition)
- Uta Bilow and Michael Kobel (project leaders)



# Basic ideas

## How to build the module?

### Audience

- Our audience doesn't go to science events
- They don't have a science background or interest

### Locations

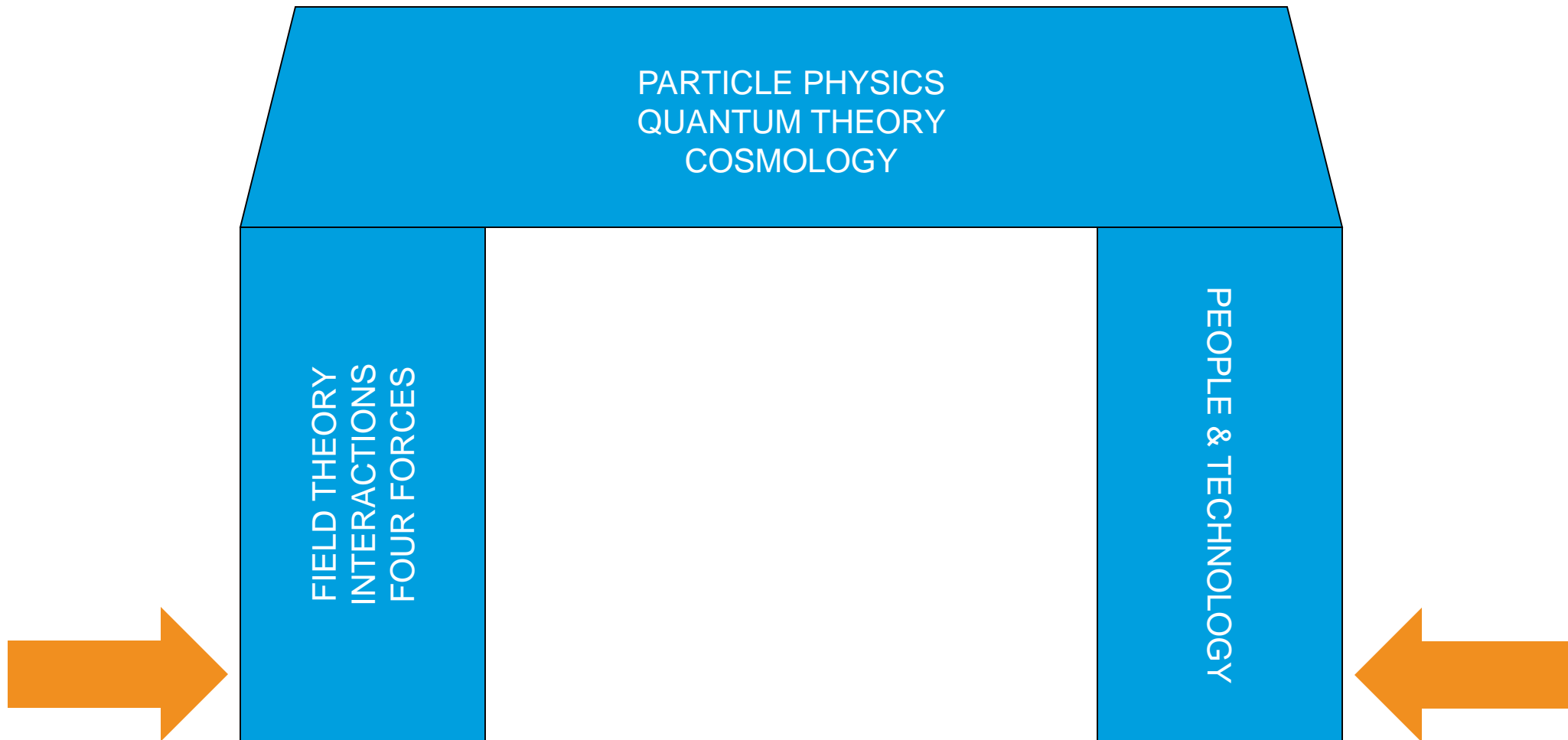
- We go to where the people are
  - Marketplaces, train stations, festivals
  - Build relationship with local authorities to locate suitable places and apply for permits to exhibit

### Method

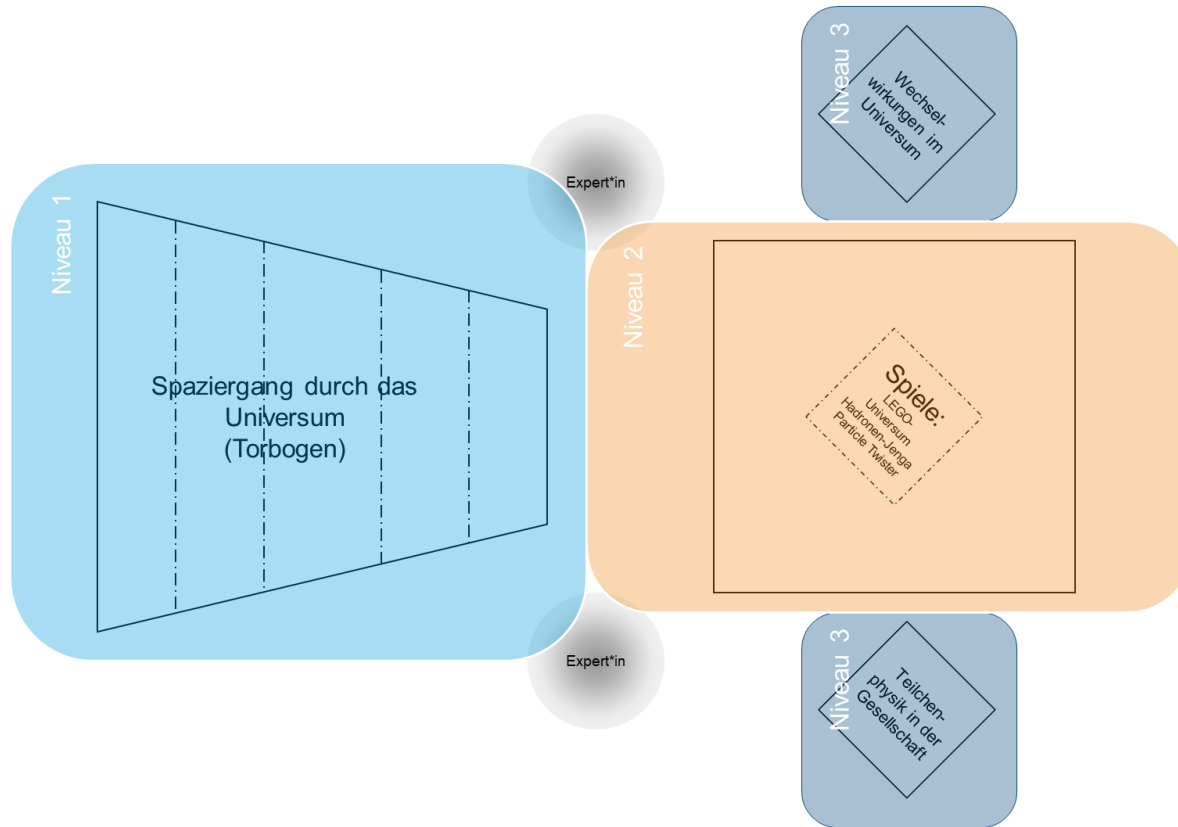
- No enclosed structures, people can freely come and go without entering something
- Make the universe (i.e. the night sky) the starting point
- Make it FUN (games, interactivity)

# The concept – how would lay people get into particle physics?

The starting point for developing the module



# Module overview



## Three stages

- Archway (Introduction, eyecatcher)
- Pavillion (Games to deepen exploration)
- Columns (Synthesis → main supporting concepts)

## Indoor / outdoor

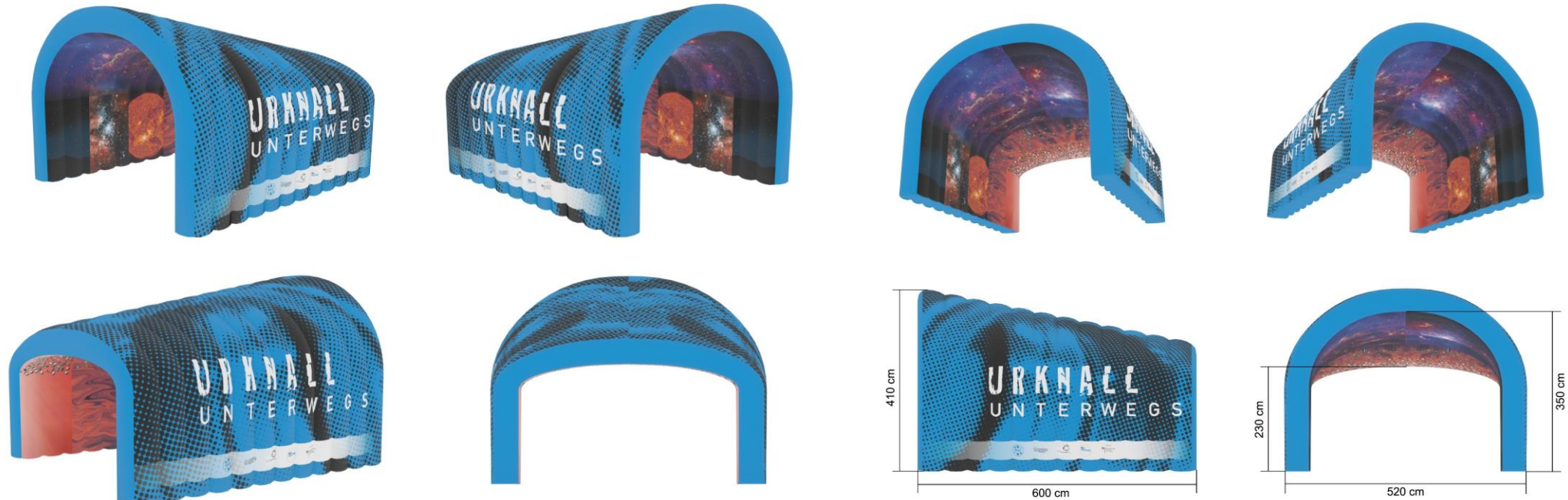
- So no touchscreens!
- Instead, let people bring their own – a personal guide on guest's smartphone

## Design help and reference

- Science Gateway at CERN, Weltmaschine, DESYUM at DESY
- Netzwerk Teilchenwelt and IPPOG resources

# Archway – walk backwards in time to the Big Bang!

4.5 metres tall, 6 metres long – shape suggests expansion of universe

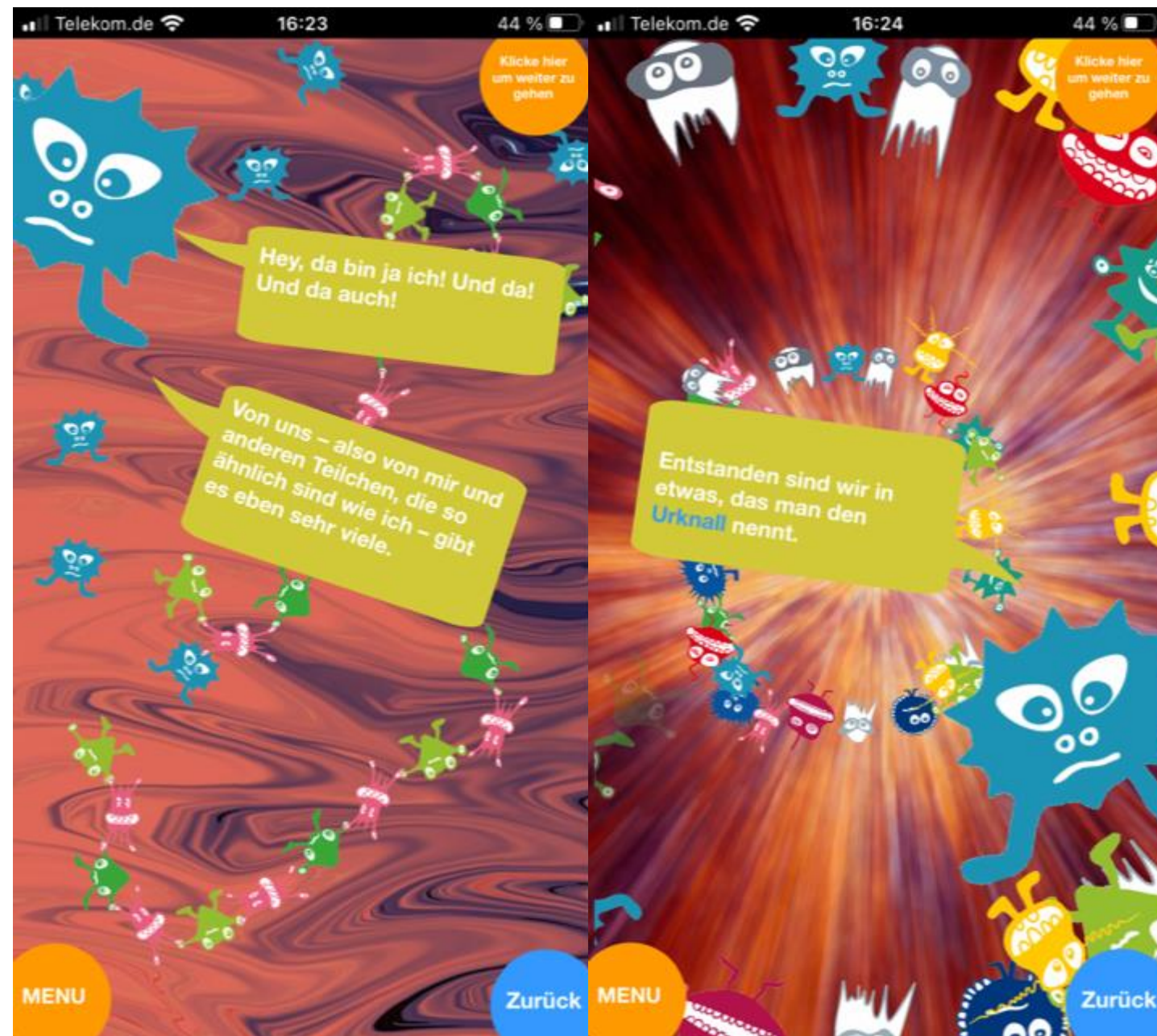




# Games

Introduce concepts like interactions between particles





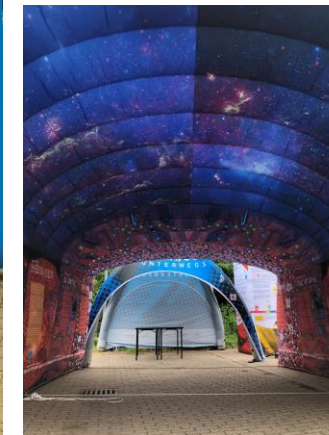
Try out the web guide (German only)





# Finished product

Inflatable elements that can be used indoors and outdoors

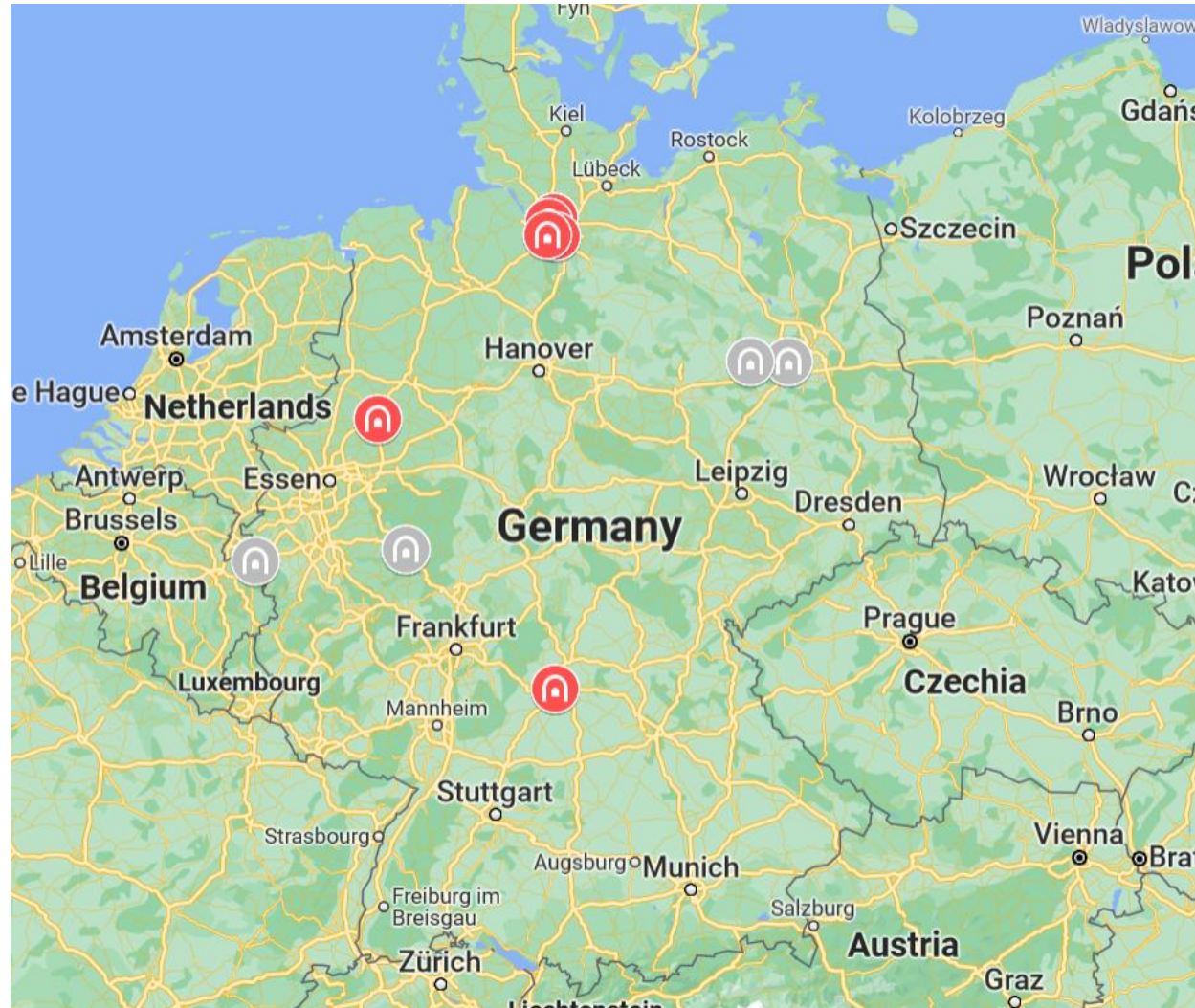


# The module in action



# Exhibitions

July 2021 to now in red, stops in planning in grey





# The module at work



# Now how we doing this with COVID around?

A: Carefully.

- So far all exhibitions have taken place outside
  - By design the module is easily constructable outdoors
- Following requirements of local authorities, including requiring masks and 1.5-metre distancing
- Depending on local situations, also requiring log-ins
- One of our games has been repurposed as a giveaway to ease hygiene issues
- In 9 exhibition days so far, only one person was asked to leave due to not following COVID restrictions



# Thank you very much!

And thank you to the outstanding team behind this effort:

- **Netzwerk Teilchenwelt**
  - Uta Bilow, Prof. Michael Kobel, Philipp Lindenau, Moritz Springer, Lisa Johnsen, Caroline Förster, Sebastian Fabianski, Prof. Christian Klein-Bösing
- **Weltmaschine**
  - Barbara Warmbein
- **DESY**
  - Britta Liebaug, Christian Mrotzek, Kerstin Straub, Carolin Schwerdt, Ulrike Behrens
- **TU Dresden**
  - Nicole Schmidt, Birgit Becker
- **CERN**
  - Sascha Mehlhase, Patricia Verheyden, Christoph Rembser



# Presentation summary

Thank you for your attention

- Interactive module goes to places where people are (marketplaces, parks, public squares)
- Target audience: people who don't get involved in other outreach activities
- Inflatable elements, flexible for outdoor and indoor use
- A product of excellent collaboration (Netzwerk Teilchenwelt, CERN, DESY, German universities)
- So far tour is being received well and working within COVID restrictions

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