

Press release**Technische Universität Dresden****Konrad Kästner**

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<http://idw-online.de/en/news758851>Miscellaneous scientific news/publications
Physics / astronomy
transregional, national**Freeze like a Star! Web Exhibition Explores the Mysteries of the Quantum World**

Colder than in outer space, higher pressure than 30 sperm whales on a stamp, and super magnets that could hold two Eiffel Towers: The search for new quantum materials - the materials of the day after tomorrow - is taking place today under extreme conditions. Yet it is often difficult to understand what the researchers actually do in their high-performance laboratories.

The Würzburg-Dresden Cluster of Excellence ct.qmat–Complexity and Topology in Quantum Matter has now taken a big step towards popular science communication. The web exhibition “SHOWCASE–Insight into our Research” provides information about the goals, current activities, and research achievements of over 250 international cluster researchers - with easy-to-understand texts, catchy illustrations and entertaining videos.

“No less than three exhibitions were opened this year, all explaining our research themes. The positive response inspired us to prepare these topics in a multimedia format and make them accessible on our website. Now you can navigate through our mysterious quantum world from the comfort of your sofa anywhere in the world. This is an enormous advantage, not the least during the coronavirus pandemic,” emphasizes Prof. Matthias Vojta, spokesperson of the Dresden branch of the Cluster of Excellence.

Available in German and English, the web exhibition explains in an easily understandable way the extreme conditions that prevail in the high-performance laboratories, why researchers design quantum materials atom by atom, and what topological quantum physics has to do with hairy donuts. An outlook on future applications leads from “cold chips” to “QuBits” and quantum computers. For those who want to know more, there are links to background information.

“In Germany we are leaders in the field of topological quantum materials and we play in the top league of our research field worldwide. But we also want to communicate to the general public outside our scientific community how exciting our experiments are, what groundbreaking results we have achieved and what this means for the society as a whole. This is particularly important to us, because we are convinced that quantum technologies will decisively shape the high-tech of the 21st century and lead to new applications,” explains Prof. Ralph Claessen, spokesperson of the Würzburg branch of the Cluster.

Cluster of Excellence ct.qmat

The Cluster of Excellence ct.qmat–Complexity and Topology in Quantum Matter has been jointly managed by the Julius-Maximilians-Universität Würzburg and the TU Dresden since 2019. Over 250 scientists from 33 countries and four continents study topological quantum materials that reveal surprising phenomena under extreme conditions such as ultra-low temperatures, high pressure or strong magnetic fields. If we succeed in making these special properties accessible under everyday conditions, they will form the basis for revolutionary quantum chips and novel technological applications. The Cluster of Excellence is funded as part of the Excellence Strategy of the German federal and state governments.

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<http://ctqmat.de>

<https://facebook.com/ct.qmat>

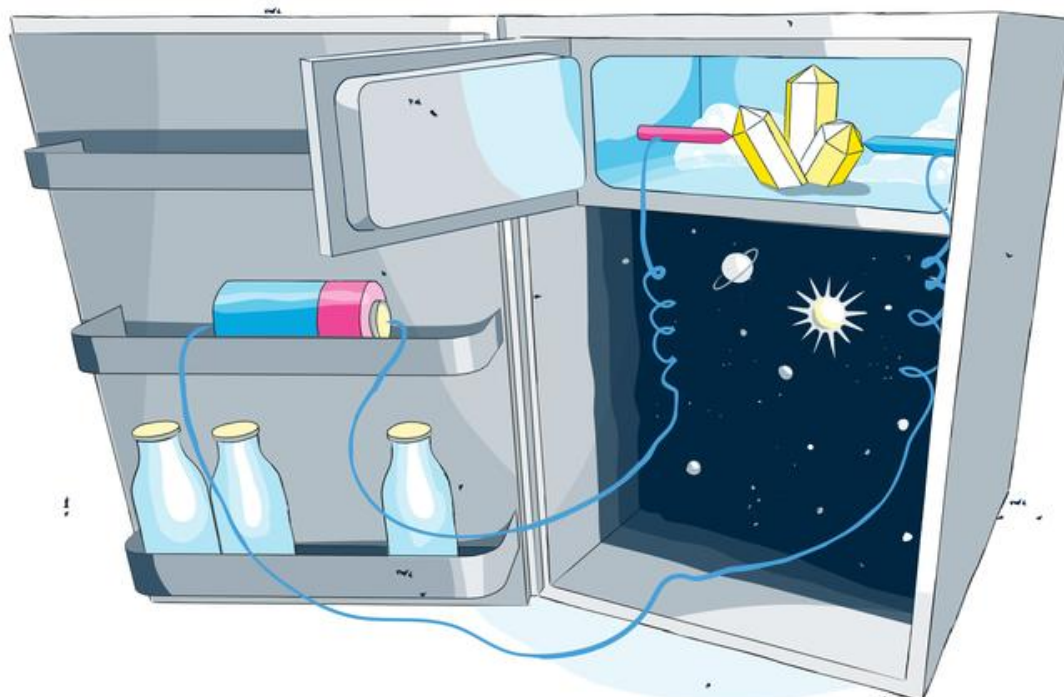
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URL for press release: <https://ctqmat.de/showcase> web exhibition

URL for press release: <https://youtu.be/LXjuUoTNamk> Footage "Cluster of Excellence ct.qmat: Atom by atom towards new quantum technologies" (c) Tobias Ritz, German with optional German subtitles

URL for press release: https://youtu.be/_FFBfMeHVam Footage "Cluster of Excellence ct.qmat: Atom by atom towards new quantum technologies" (c) Tobias Ritz, English with optional English subtitles



The Cluster of Excellence ct.qmat explores new quantum materials that reveal surprising phenomena under extreme conditions - such as ultra-low temperatures.

