



Einstein's telescope: scientists want to measure gravitational waves in the Region

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The gravitational-wave - 1916 was seen as your existence of Albert Einstein before, 2015 is the first direct detection of the waves. Since then, the man has quite a new insight into the universe. Detectors in the United States were able at that time to capture the waves in the United States. Scientists want to measure here, too, in the Region of the emission of gravitational waves, the Einstein telescope should make it possible.

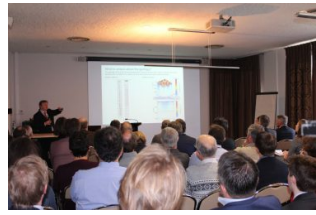
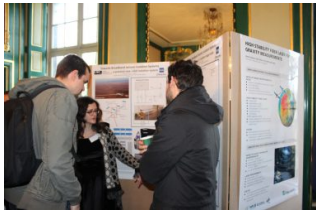


Image: Lena Orban/BRF

Anyone who hears the term telescope, probably thinks directly to the stars, and the incredible Vastness of the universe. It is also another way, namely underground, scientists from Germany, the Netherlands and Belgium now have it. You want to build in the Euregio, an Einstein telescope, a telescope that is mainly used to lie under the earth, and gravitational waves to measure.

As a telescope then just the white Gregor Rauw should look like. He is a Professor at the University of Liege and involved in the project. "It is three channels, each of which will be in about ten kilometers long. At each point of this triangle detectors, the night the little waves, caused by gravitational waves in the universe, food. The Einstein telescope will not stand out in the landscape. It will be at each of these three points is merely a building available, otherwise, you will be able to the Einstein telescope from the surface do not recognize. It is located in a depth of 200 meters."

Scientists from all over Europe are interested in the project. But not only the location of Euregio is for the Einstein telescope in the conversation. Other locations, for example in Sardinia and Hungary, are also considered.



Why the three-country region can be so interesting for such a telescope, explains Frank Linde, Professor at the University of Amsterdam. "We live here on very special soil. He has a soft surface, but the hard stones underneath. This means that all the noise we make people – cars, trucks, wind edges, this soft surface is insulated, and not in the lower layers penetrate. If we are deeper, we have a very low seismic Background. Therefore, it is better to start in a very quiet environment is and we have here."

The ideal place would be around the tri-state area. Thus, one of the detectors for the measurement of gravitational waves would have to be in the municipality of Kelmis housed. A precise location is not provided. Studies need to clarify how the soil is, in fact, at this point. "It will initially be carried out holes. On the basis of the results of these holes are then employed in the laboratory, simulations with computer models, to test the nature of the soil, how he reacts to activities on the surface. The measurement of seismic activities, and earthquake in addition, as these have an effect on the detectors," says Professor Gregor Rauw.

The triangle should be suitable for such a telescope, to decide, the municipality of Kelmis: either the resumption of mining activities or an Einstein telescope, would be for the location of science and research in the East of Belgium is certainly a figurehead. Both projects can not be together, because the mining would trigger many movements in the soil. Until then, a little bit of time goes by. 2021, at the latest, to decide whether the billion-project "Einstein's telescope" comes in the Euregio or not.

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