Fachgruppe Physik und Astronomie Universität Bonn

Physikalisches Kolloquium
Fachgruppe Physik/Astronomie der Universität Bonn

UNIVERSITÄT BONN

Friday, 20.10.2023, 1:15 p.m.
in Lecture Hall I of the Physics Institute

Michael Kramer

Max Planck Institute for Radio Astronomy, Bonn

„Search for a stochastic gravitational wave background"

While radio pulsars provided the first evidence for the existence of gravitational wave, it is also possible to use them to construct a galaxy-sized gravitational wave detector. By trying to measure the minute impact of gravitational waves on the arrival time of radio pulses on Earth, one can search for gravitational waves at very low frequencies, ie. from nHz to microHz. Results of such an experiment conducted at the Effelsberg radio telescope for the last 25 years have been presented recently as part of the efforts of the European Pulsar Timing Array. The results provide evidence for a gravitational wave signal, most probably caused by the merging of galaxies in the distant Universe. Similar results have been presented simultaneously by other collaborations in the world, supporting the presented conclusions. The European data are the longest, densest and best in frequency coverage, but questions and challenges remain. The talk will remaining questions and future prospects.

Everybody is welcome, especially students of all semesters.

Coffee and tea will be available after the colloquium.

Physikalisches Institut

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