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Alfried Krupp Fellow Lecture

Donnerstag
11. Januar 2018
18.00 Uhr

Dr. Jarosław Kłos

Future computers. Can the signal processing based on magnetic waves beat electronics bottleneck?

For over 50 years the development of electronics was described by empirical law which predicts the doubling of the number of transistors in integrated circuits every two years. This tendency of unconstrained growth, called Moore's law, must hit the limits which results from technological and physical constrains. Therefore, there is a need to look for alternatives for electronic based devices which work on different physical principles. The wave based signal processing is one the possibilities which can overcome the bottlenecks of development of conventional electronic devices and computers.

The information in computer systems is processed nowadays using electronic current and voltage whereas the data storage is done with the aid of magnetic systems. A possibility to unify the data processing and data storage is the usage of spin currents or spin waves as a carrier of information. The lecture will outline the prospects of the new field: magnonics which use spin waves for transmitting, routing and processing of information.

Jarosław Kłos was born in 1975 in Poznań, Poland. He studied physics at Adam Mickiewicz University in Poznań, where he is today an assistant professor. From October 2017 till September 2018 Jarosław Kłos is a Senior Fellow at the Alfried Krupp Wissenschaftskolleg Greifswald.

Moderation: Professor Dr. Markus Münzenberg

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