UNIWERSYTET SZCZECIŃSKI
INSTYTUT FIZYKI

Środowe seminarium w Instytucie Fizyki

April 20^{th} – 12:00

Prof. Krzysztof Sacha

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"Time Crystal Phenomena"

Time crystals are quantum many-body systems which due to interactions between particles can spontaneously form periodic behavior in time in analogy to spontaneous formation of periodic structures in space in ordinary space crystals [1]. We will show that not only periodic crystalline structures but also time quasi-crystals can spontaneously emerge in quantum many-body systems. In addition to spontaneous formation of time crystals, condensed matter behavior in the time domain can be externally imposed in periodically driven systems [1]. We will also show that combing time and space lattices it is possible to create time-space crystalline structures and ivestigate even 6D condensed matter phenomena.

[1] K. Sacha, Time Crystals, Springer International Publishing, Switzerland, Cham, 2020.