

Friday, July 20, 2018

1F Seminar Room, RIKEN Sendai Campus

(理研 仙台地区 1階セミナー室)

Language: **Japanese**

Wako Campus: Cooperation Center, 3F, W319, TV relay
(和光：研究交流棟3階会議室 W319 (TV会議))

16:00~16:45

The 55th RAP Seminar

Development of cosmic-ray imaging with nuclear emulsion : Discovery of big void in the Khufu's Pyramid and applications

原子核乾板による宇宙線イメージング技術の開発：クフ王のピラミッド内部における巨大な空間の初検出と広がる応用

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Cosmic-ray imaging (Cosmic-ray muon radiography) is a visualization technique of internal structure of large-scale objects by observing cosmic-ray muons. Muon is one of fundamental particles and high energy ones can penetrate more than one kilometer rock. Thanks to this characteristic, the inner image of large-scale objects can be taken just like X-ray imaging. A nuclear emulsion is a particle detector which is able to record trajectory of charged particles with micrometric accuracy in three dimension. We applied cosmic-ray imaging for investigation of the Khufu's Pyramid since 2015 through ScanPyramids project and we discovered unknown big void just above the Grand Gallery (known big structure). In this seminar, imaging techniques, result of Khufu's pyramid and future prospects will be presented.

16:45~17:30

The 56th RAP Seminar

A challenge for operating gene functions by THz wave irradiation to actin

テラヘルツ光による遺伝子機能操作：アクチンをターゲットとした挑戦

Prof. Masahiko HARATA

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Gene is the blue print of every living organism. The functions of genes are appropriately regulated in the organisms, and are involved in cell development, environmental adaptation, senescence, diseases, and so on. Therefore, many challenges for artificial operation of genes have been attempted. Actin, one of the most evolutionarily conserved cellular proteins is now known to be an important regulator of gene functions. We recently found that actin function is modulated by THz wave irradiation, and this finding provides a possibility of THz wave for operating gene functions.

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