

Seminarium Astrofizyczne
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Agnieszka Janiuk

(Centrum Fizyki Teoretycznej PAN)

Hyperaccretion and nucleosynthesis in GRB engines

In the accretion flows at the base of gamma ray burst jets, the physical conditions lead to a copious production of heavy elements. Light isotopes (helium, lithium, beryllium), as well as heavier elements with mass numbers in the range $A \sim 60-80$, corresponding to the first maximum of nuclide production in the process of rapid neutron capture (r-process), are created in the accretion disks. The magnetically driven ejecta from these disks may be prone to a further synthesis of nuclides, namely the second, and third peak of r-process, until mass number $A \sim 200$. The recent observational discoveries (e.g., electromagnetic counterpart of GW 170817) have proven that the subsequent radioactive decay of such isotopes is responsible for the emission at lower energies that follows the gamma-ray bursts, and the effect is called “kilonova”.

Serdecznie zapraszam,
Agnieszka Majczyna