

New opportunities in nuclear physics with high-power lasers and multi-photon absorption

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I will present some new possibilities, which are very unique for high-power laser systems, to advance nuclear photonics. The main focus will be to show that the multi-photon mechanism could pave a way to circumvent the very challenging problem of isomer pumping/depletion and gamma-ray laser, provided that an intense gamma-flash for laser-plasma interaction is available. The same mechanism might be applied to other high-intensity beams (such as neutron/proton) in the future to gain crucial knowledge of the nuclear man-body forces. By all means, a synergy between nuclear and laser-plasma physics is highly demanded.

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