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## Laser Plasma Accelerating Ultra-Short Ultra-Intense Electron Beam for Nuclear Applications

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With the development of ultra-short and ultra-intense laser technology, laser driven plasma electron acceleration is becoming increasingly mature. Compared with traditional RF acceleration, this acceleration method has significant characteristics - an acceleration gradient three orders of magnitude higher. It is precisely because of its ultra-high acceleration gradient that the accelerated beam has characteristics such as ultrashort <10s fs, dense >1e19 cm-3, and high current >10s kA. This talk will introduce our recent experimental progress in laser accelerated ultra-short and high current electron beams, and introduce their ultra-fast and ultra-intense characteristics into nuclear physics research, exploring their potential applications in ultra-fast and efficient nuclear isomer excitation, ultra-short pulsed neutron source, high energy-resolution neutron resonance absorption spectroscopy.

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