

S001-20

A 会場 : 11/5 AM1 (9:00-10:30)

10:10~10:25

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Laboratory astrophysics with relativistic laser pulses

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We have been working on laboratory astrophysics, where space and astrophysical phenomena, such as collisionless shocks and magnetic reconnections, are experimentally investigated with high power, large laser facilities. However, the number of large laser facilities in the world is very limited, and the number of shots is also very small; the experimental opportunities are also very limited. Recently, we have been extending laboratory astrophysics from non-relativistic to relativistic regime using relativistic intense laser pulses with high repetition. In this talk, we introduce our recent efforts on sub-relativistic ion acceleration and the novel diagnostics for quantum beams, plasmas, and electric/magnetic fields. We are planning to create counterstreaming sub-relativistic plasma flows and address nonlinear evolution of the Weibel and filamentation instabilities under the influence of an external magnetic field in a controlled manner.