

**R008-24**

**Zoom meeting D : 11/4 PM2 (15:45-18:15)**

**15:45~16:00**

## **大型レーザー実験による磁化プラズマ衝撃波の生成およびその長時間発展**

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## **Formation and long time evolution of magnetized shocks produced by high power laser experiment**

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We have developed the method of magnetized collisionless shock formation experiment using high power laser. Long time evolution of the system is investigated by controlling laser power, ambient gas pressure, and target position. To apply an ambient magnetic field in the region of interest, we used a Helmholtz coil driven by a portable pulsed magnetic field generation system. A shock is formed by irradiating an aluminum target surrounded by nitrogen gas. The ablated target plasma pushes the ambient gas which is also immediately ionized right after the main laser shot through photo ionization due to intense radiation emitted by the laser-target interactions. Then, a shock is formed in the gas plasma. We successfully followed long time evolution of the system up to 80ns which is much longer than the previous time (=30-40ns) that we could follow. We will discuss detailed structures of the compressed gas region and the structures are compared with the PIC simulation customized for the experiment.