

Abstract Submitted
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Evidence of fountain effect through self-proton/ion radiography in relativistic laser target interaction N. RENARD-LE GALLOUDEC, Y. PAUDEL, A. MERWIN, A. YA FAENOV, E. D'HUMIERES, PH. NICOLAI, V.L. KANTSYREV, I. SHRESTA, V.V. SHLYAPTSEVA, G.C. OSBORNE, M.E. WELLER, A.S. SAFRONOVA — In the last 10 years laser-produced proton beams have emerged as a useful tool for applications from proton therapy to proton radiography of high-energy density phenomena. In our case, in addition to protons accelerated from the back different low and high Z target by the Target Normal Sheath Acceleration (TNSA) mechanism, protons and multi-charged ions with an energy of more than 7MeV/u are stripped from the front surface of the target, move away from it They are then turned around by self-generated fields in the front side expanding plasma, which then pull them back toward the target. They then go through the target and stalk and radiograph it, producing a self-radiography of the target with one laser beam. These two processes are recorded on the same RCF layers after the target. Observed proton/multicharged ions self-radiography phenomena could in future allow measurement the value of magnetic field produced in relativistic laser – solid target interaction.

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