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Rarefaction after fast laser heating of thin metal film on a glass mount: spallation and inflation from one-dimensional to three-dimensional ablation flow NAIL INOGAMOV, VIKTOR KHOKHLOV, YURY PETROV, L. D. Landau Institute for Theoretical Physics, Russian Academy of Sciences, Chernogolovka, Russia, VASILY ZHAKHOVSKY, KIRILL MIGDAL, DENIS ILNITSKY, All-Russia Research Institute of Automatics, ROSATOM, Moscow, Russia, NOBORU HASEGAWA, MASAHARU NISHIKINO, MITSURU YAMAGIWA, MASAHIKO ISHINO, TETSUYA KAWACHI, Quantum Beam Science Center, Japan Atomic Energy Agency, Japan, ANATOLY FAENOV, Institute for Academic Initiatives, Osaka University, Suita, Osaka, Japan, TATIANA PIKUZ, Graduate School of Engineering, Osaka University, Suita, Osaka, Japan, SHINTARO TAKAYOSHI, TAKASHI EYAMA, NAOYA KAKIMOTO, TAKURO TOMITA, Faculty of Engineering, The University of Tokushima, Japan, MOTOYOSHI BABA, YASUO MINAMI, TOHRU SUEMOTO, Institute of Solid State Physics, University of Tokyo, Japan — We numerically and experimentally consider the effect of sub-picosecond Ti:sapp laser pump pulse onto 60-100 nm silver and gold films mounted onto a silica substrate. Pump pulse spalls out the film from the substrate. Influence of diameter of a laser irradiated spot 1-100 microns on a film surface is studied. A cupola like spallation shell is flying from the substrate. For the large spot the soft X-ray probe laser is used for measuring the ablation process. The research (NAI, VVZh, VAKh, DKI, YVP, KPM, AYP, TAP) has been performed under financial support from Russian Science Foundation (RSCF) (project No. 14-19-01599).

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