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Estimating the inductance at the PF-1000 plasma focus¹ JIRI KORTANEK, PAVEL KUBES, JOSEF KRAVARIK, KAREL REZAC, DANIEL KLIR, Czech Technical University in Prague, MARIAN PADUCH, MAREK SCHOLZ, EVA ZIELINSKA, IPPLM Warsaw — The plasma focus PF-1000 in the IPPLM in Warsaw, operating with 2 MA with 10 to the power of 11 neutron gain, was investigated with interferometry. 16 interferometric pictures with millimeter spatial resolution were obtained, representing the layout of plasma density. Their time step is 10-20 ns during a 220 ns period. Laser Nd:YLF with pulse duration below 1ns and a set of mirrors was used, splitting the main ray in 16 mutually delayed beams. Interferograms were processed with developed applications in order to calculate the inductance of plasma column under the assumption that the current flows straight along a thin skin layer at the surface of the current sheath. Known inductance enables estimation of the energy transformations in the plasma.

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