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Direct laser field electron generation using a tight focused high intensity laser pulse SYLVAIN FOURMAUX, ANTOINE BOIS, INRS-EMT, Universite du Quebec, Varennes J3X 1S2, Quebec, Canada, SYLVAIN DE LESELEUC, LULI, UMR 7605, Ecole Polytechnique, 91128 Palaiseau, France, MARC GLESSER, KAZUTO OTANI, STEPHANE PAYEUR, INRS-EMT, Universite du Quebec, Varennes J3X 1S2, Quebec, Canada, MARK QUINN, GPHI, CEA-Saclay, DSM-IRAMIS-SPAM, 91191 Gif-sur-Yvette, France, ARPIT SARAF, BRUNO SCHMIDT, PATRIZIO ANTICI, FRANCOIS LEGARE, STEVE MACLEAN, INRS-EMT, Universite du Quebec, Varennes J3X 1S2, Quebec, Canada, MICHEL PICHE, COPL, Universite Laval, Quebec G1V 0A6, Canada, JEAN-CLAUDE KIEFFER, INRS-EMT, Universite du Quebec, Varennes J3X 1S2, Quebec, Canada
— Energetic electrons generation (around 20 keV) by longitudinal field acceleration from a laser pulse has been demonstrated by focusing a radially polarized TM01 ultrashort laser pulse (1,8 microns, 550 microJ, 15 fs) with a high numerical aperture parabola. We extend this technique using a 100 TW laser system. The expected intensity is around 10E22 W/cm2. Preliminary results about energetic electrons generation (MeV range) by focusing a linearly polarized TEM00 ultrashort pulse (800 nm, 3 J, 30 fs) are presented.

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