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Plasma devices: plasma dechirper and plasma lens

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The Plasma wakefield acceleration (PWFA) techniques, despite being a promising approach to high gradient acceleration, create a number of challenges from a point of view of beam transport and beam manipulation. At the same time the progress in PWFA experiments has opened a road for creation of a number of plasma based tools for beam manipulations. In this talk we will consider two of such devices: a plasma lens, that uses the magnetic field of the high current discharge inside the plasma to focus the beam, and plasma dechirper, that uses self induced wakefield for beam phase space manipulation. This overview will present the basic principles, recent experimental results and future prospects of these two devices.

Primary authors: SHPAKOV, Vladimir (LNF); ANANIA, Maria Pia (LNF); BELLAVEGLIA, Marco (LNF); BIAGIONI, Angelo (LNF); BIESTO, Fabrizio Giuseppe (LNF); CARDELLI, Fabio (LNF); CESARINI, Matteo (LNF); CHIADRONI, Enrica (LNF); CIANCHI, Alessandro (ROMA2); COSTA, Gemma (LNF); CROIA, Michele (LNF); DEL DOTTO, Alessio (INFN); DI GIOVENALE, Domenico (LNF); FERRARIO, Massimo (LNF); FILIPPI, Francesco (LNF); GIRIBONO, Anna (LNF); LOLLO, Valerio (LNF); MARONGIU, Marco (LNF); MARTINELLI, Valentina (LNF); MOSTACCI, Andrea (Sapienza); PIERSANTI, Luca (LNF); DI PIRRO, Giampiero (LNF); POMPILI, Riccardo (LNF); ROMEO, Stefano (LNF); SCIFO, Jessica (LNF); VACCAREZZA, Cristina (LNF); VILLA, Fabio (LNF); ZIGLER, Arie (LNF)

Presenter: SHPAKOV, Vladimir (LNF)

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