

**One Self-Neutralization Model of Beams: New Results, J. PIVAR**, Institute of Physics, Slovak Academy of Sciences, Bratislava, Slovakia - The neutralization effects are a limitation of accelerator performances at various occasions. Some of the difficulties of the first accelerators came from the fact that the vacuum systems were not good enough. The difficulties will rather be linked at the large currents and high densities especially of the circulating beams. In this paper some new results are shown by using of one self-neutralization model of beams by ionization of the residual gases in accelerators.