

# THE ASYMMETRY CURRENT IN STELLARATORS

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An analysis of drift trajectories of charged particles in tokamak leads us to the conclusion on the possibility of a new longitudinal electric current which appears, in contrast to the bootstrap current, to be proportional to plasma pressure. The qualitative difference in drift trajectories of particles, which move in co- and counter- direction with respect to magnetic field produces velocity-space asymmetry of the trapping boundary of charged particles. As a result the new electric current generates. We named this current an asymmetry current. The approximate formula for the asymmetry current in tokamaks and stellarators, which is valid for the entire plasma column, including the near-axis region, is obtained. It is shown that the density of asymmetry current is maximal near magnetic axis and decreases at plasma periphery. The possibility of the experimental detecting of the asymmetry current in stellarators is discussed.