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## Development of magnetic system for bending electron beam in industrial accelerator ILU-10

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The results of the development of a magnetic system for bending an electron beam in the industrial accelerator ILU-10 will be presented.

The ILU-10 accelerator has an operating energy range of 2.5–5 MeV. The available design allows to eject electrons only vertically. However, there is a demand for the ability to eject a beam bended at 90°.

The paper presents two ways to solve this problem. The first system consists of 2 dipole magnets. First dipole magnet already developed and used at the facility was taken. Due to the change in the current in the coils of the 1st dipole, the beam deflection angle changes. In the second dipole, the current is constant. The system can provide scan of 1500 mm.

Another system is based on the use of a magnetic mirror. The beam from the accelerating structure enters the magnetic lens, and then the focused beam enters the magnetic mirror. This one will operate on one current and rotate the particles at the same angle, regardless of their energies. The dipole magnet used on actual accelerator system can be applied to scan the beam.

In this paper the results of modeling two magnetic systems in the OPERA software environment will be presented. Tracks of particles in the required energy range are calculated.

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