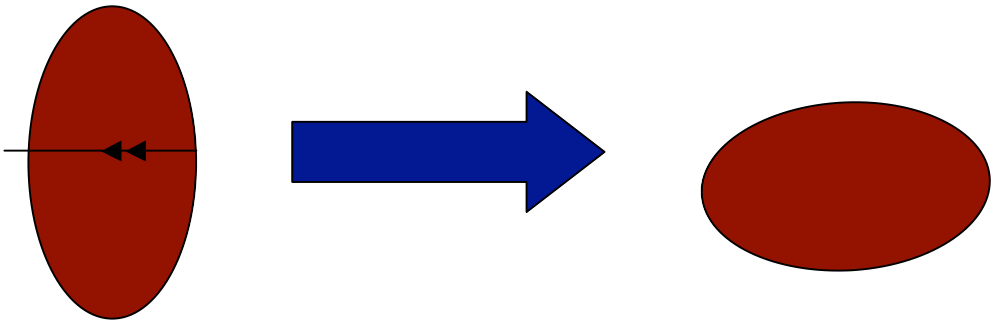
ACCEPTANCE OF THE ADIABATIC MATCHING DEVICE (AMD)

The AMD acceptance on the target (for a target inside the magnetic field) is represented in a transverse plane by the following ellipse with small half-axis equal to $(\sqrt{B_s / B_o})a$, where B_o and B_s are the maximum and minimum fields of the AMD, respectively and a, the accelerator iris radius; the great half axis is given by: $e\sqrt{B_o B_s}$ .a., which represents the maximum transverse momentum accepted. With B_o and B_s equal respectively to 6 and 0.5 Tesla and a=20 mm (L-Band section) we get a maximum accepted radius of ~6mm and a maximum momentum of 10.4 MeV/c.
The AMD transforms the emittance and we have at the end of the AMD an ellipse with large radial dimension and small transverse momentum.



At the target At the end of the AMD

At the AMD output, the ellipse axes are: big semi-axis= a and small semi-axis = eB_sa
With our values, it comes 20 mm and 3 MeV/c respectively.

NB. The simulations made with PARMELA through the AMD showed such transformation