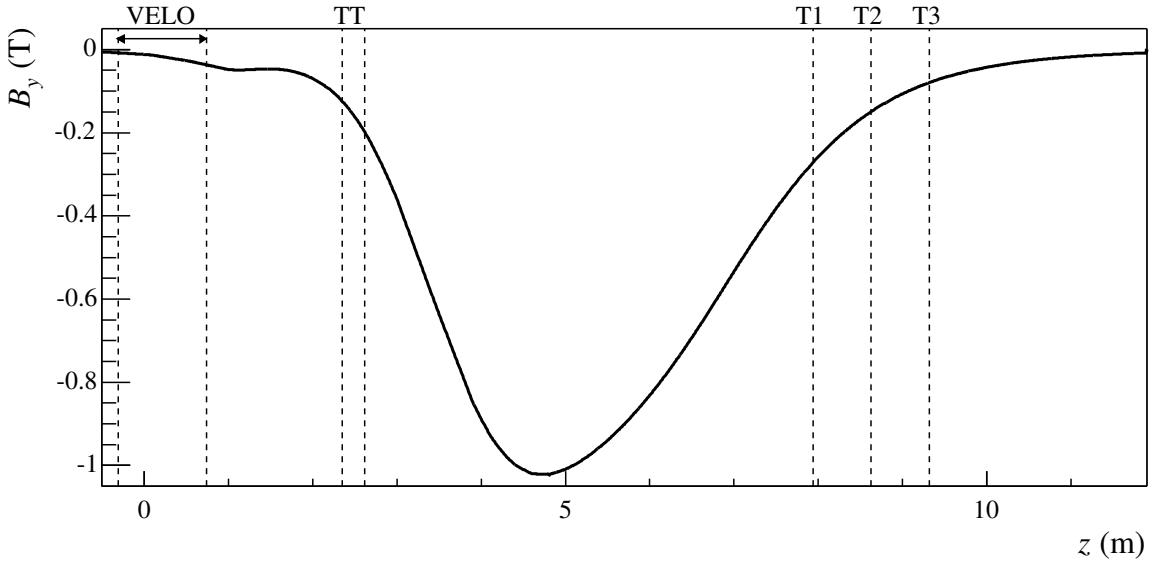

Figure 3.6: *The main component of the magnetic field strength (B_y) along the z axis.*

Trigger Tracker, which is placed after RICH 1 and just in front of the magnet. Third, after the magnet three tracking stations are located: T1, T2, and T3. The inner part of these stations, close to the beam pipe, is referred to as the Inner Tracker; the outer part covers the remaining acceptance and is called the Outer Tracker. The Outer Tracker is constructed from straw tube drift chambers; the other tracking detectors are all silicon strip detectors.

Charged particles are bent in the B field of the magnet [28]. Their momentum is measured from the deflection of the trajectories as the particles traverse the magnet. The difference between the track slope in the VELO and the track slope in the T stations is inversely proportional to the particle's momentum. In Chapter 6, this relation will be discussed. The bending power of the magnet is represented by the total integrated field, which is $\int B\mathrm{d}l = 4.2\,\mathrm{T\,m}$. The strength of the main component of the magnetic field along the z axis is shown in Fig. 3.6.

The detector design has gone through a number of optimisation phases. These changes are referred to as the "reoptimisation" [26]. The detector setup described in this thesis refers to this reoptimised design.

3.3 Vertex Locator

The Vertex Locator (VELO) [26, 29] contains 21 stations, positioned along and perpendicular to the beam axis. Figure 3.7 shows a cross section of the VELO and the interaction region as seen from above. Two types of silicon sensors are used: one measures the r coordinate with circular strips centred around the beam axis, the other measures the ϕ coordinate with straight, radial strips. The half-disc sensors, shown in