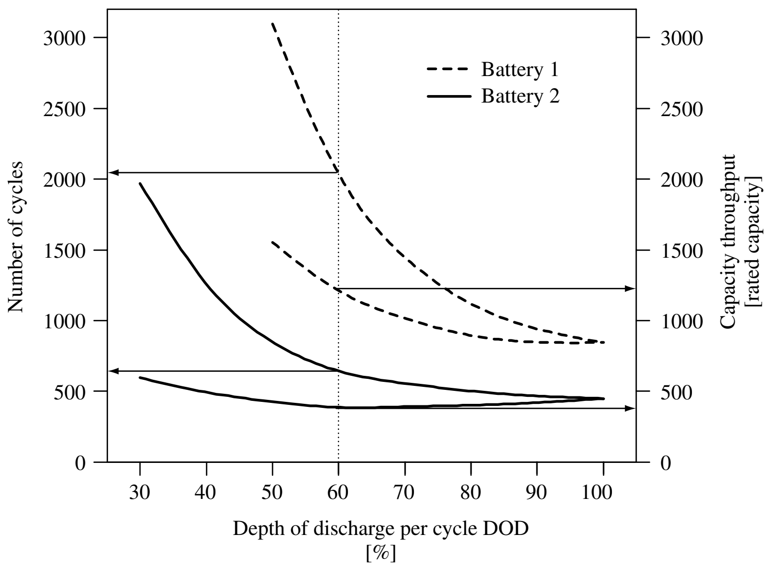

Figure 18.24 Number of cycles and overall charge transfer (capacity throughput) in units of the rated capacity during the battery lifetime as a function of the depth of discharge during cycling. Data from data sheets from battery manufacturers

Table 18.5 Typical end-of-discharge voltages up to which 100% of the C_{10} capacity has been discharged from the battery at different discharge currents at room temperature

$I_{discharge}$	U [V/cell]
$1.0 \times I_{10}$	1.80–1.85
$0.5 \times I_{10}$	1.85–1.90
$0.2 \times I_{10}$	1.90–1.95
$0.1 \times I_{10}$	1.95–2.00

control the maximum DOD by the voltage. The drawback of this method is that the discharged capacity up to a certain voltage limit depends very much on the discharge current. Table 18.5 shows typical end-of-discharge voltages up to which 100% of the C_{10} capacity has been discharged from the battery. This shows the problem of an efficient DOD control. If the maximum DOD is assured by a high voltage limit even at small currents (e.g. 1.95 V/cell), the available capacity at higher currents is very limited [27]. Figure 18.25 shows a more pronounced version of the problem. A given voltage limit might be appropriate for one battery type, but for another with the same technology (flat plates, lead acid and flooded electrolyte) the discharge curve looks quite different and the same voltage limit results in significant differences in the maximum DOD with respect to the minimum SOC defined to protect the battery as shown in the figure. The difference