FIGURE 8.1: Isostasy – Pratt–Hayford model

is the density and h' the depth of the ocean. Hence there is a density surplus in a suboceanic column given by

$$\rho - \rho_0 = \frac{h'}{D - h'} (\rho_0 - \rho_w) \quad . \tag{8-6}$$

As a matter of fact, this model of compensation can be only approximately fulfilled in nature. Values of the depth of compensation around

$$D = 100 \, \text{km} \tag{8-7}$$

are assumed.

For a spherical earth, the columns will converge slightly towards its center, and other refinements may be introduced. We may postulate either equality of mass or equality of pressure; each postulate leads to somewhat different spherical refinements. It may be mentioned that for computational reasons Hayford used still