

Guide to Interpreting the Allometric coefficient

$$1 - pd_{i,t} = (1 - ph_{i,t})^{m_{i,t}} \quad (1)$$

Small allometric coefficients indicate that height increment is large relative to diameter increment, resulting in slender trees with little taper. Large allometric coefficients indicate growth patterns with slower height relative to diameter growth and trees have more pronounced taper.

In graph relating to tree 486 (Gwydyr Forest) you can see that biomass allocation has more or less equal proportion (*isometric* growth) up to the age of 40 years. After that the tree increasingly “invests” more in diameter than in height growth. This increase is exponential. As far as diameter growth is concerned we can conclude that there is a *positive allometric* relationship ($m > 1$) between diameter and height growth, i.e. diameter grows faster than height. This is different from the point of view of height growth: Here we have a *negative allometric* relationship ($m < 1$) beyond the age of 40 years, i.e. height grows more slowly than diameter.

(Modified from Murphy and Pommerening, 2010)