The extrapolation of temperature with depth due to periodic surface heating 256 is given by Beardsmore & Cull (2001) as,

Tm = T0 x exp(-ez) sin (wt – ez)

Where Tm is the departure from a mean value of temperature at a particular depth, z, and time t, due to a heating cycle with amplitude T0 and frequency ω. For Wallingford, the heating cycle is taken as the seasonally fitted temperature curve at 50 cm depth. The thermal properties of the medium are included in the ε term where ε = (π/Pκ)½, where P is the period of the heating cycle and κ is the thermal diffusivity of the ground.