$$\begin{split} r_{\text{max,scalar}} &= f_2\left(q_{\text{s}}\right) = f_1(q,t,\alpha,h) = r_{\text{max,vector}} \\ f_{2,\text{upper bound}}\left(q_{\text{s}}\right) \\ f_{1,\text{lower bound}}\left(q,t,\alpha,h\right) \end{split}$$