$$v_{\mathrm{refi}} = \left(\frac{k_{\mathrm{d}} \cdot T_{\mathrm{i-1}}}{r} - \left(A + B \cdot v_{\mathrm{ref,i-1}} + C \cdot v_{\mathrm{ref,i-1}}{}^{2} \right) - F_{\mathrm{brake,i-1}} \right) \frac{t_{\mathrm{i}} - t_{\mathrm{i-1}}}{M} + v_{\mathrm{ref,i-1}}$$