(1)
$$M\ddot{U}(t) + C\dot{U}(t) + KU(t) = F(t)$$

??β?θ??
?β??
?
?$t\,{}^t U, {}^t\dot{U}, {}^t\ddot{U}\, t+$
$\Delta t\,{}^{t+\Delta t}U, {}^{t+\Delta t}\dot{U}, {}^{t+\Delta t}\ddot{U}\,\Delta t\gamma\Delta t, (1-\gamma)\Delta t$
$\gamma\Delta t$?
$${}^{t+\gamma\Delta t}\dot{U} = {}^t\dot{U} + \frac{{}^t\ddot{U} + {}^{t+\gamma\Delta t}\ddot{U}}{2}\gamma\Delta t$$
$${}^{t+\gamma\Delta t}U = {}^t U + \frac{{}^t\dot{U} + {}^{t+\gamma\Delta t}\dot{U}}{2}\gamma\Delta t\gamma + \Delta t$$

(2)
$$M\,{}^{t+\gamma\Delta t}\ddot{U} + C\,{}^{t+\gamma\Delta t}\dot{U} + K\,{}^{t+\gamma\Delta t}U = {}^{t+\gamma\Delta t}F$$

????$t+$
$\gamma\Delta t\,{}^{t+\gamma\Delta t}U\,{}^{t+\gamma\Delta t}\dot{U}\,{}^{t+\gamma\Delta t}\ddot{U}$?

(3)
$${}^{t+\Delta t}\dot{f} = c_1\,{}^t f + c_2\,{}^{t+\gamma\Delta t}f + c_3\,{}^{t+\Delta t}f$$
$c_1, c_2 c_3$
$$c_1 = \frac{1-\gamma}{\Delta t\gamma}$$
$$c_2 = \frac{-1}{(1-\gamma)\gamma\Delta t}$$
$$c_3 = \frac{2-\gamma}{(1-\gamma)\Delta t}$$
f
$${}^{t+\Delta t}\dot{U} = c_1\,{}^t U + c_2\,{}^{t+\gamma\Delta t}U + c_3\,{}^{t+\Delta t}U$$
$${}^{t+\Delta t}\ddot{U} = c_1\,{}^t\dot{U} + c_2\,{}^{t+\gamma\Delta t}\dot{U} + c_3\,{}^{t+\Delta t}\dot{U}$$
$t + \Delta t$

(4)
$$M\,{}^{t+\Delta t}\ddot{U} + C\,{}^{t+\Delta t}\dot{U} + K\,{}^{t+\Delta t}U = {}^{t+\Delta t}F$$

????$t+$
$\Delta t\,{}^{t+\Delta t}U\,{}^{t+\Delta t}\dot{U}\,{}^{t+\Delta t}\ddot{U}\,t\,t+$
Δt
$\gamma =$??
$0.5\gamma 2-$
$\sqrt{2}\gamma = 2-\sqrt{2}$
?
??
?
?? $\Delta t n$
?

(5)
$$\alpha_1\,{}^{t+\Delta t}y + \alpha_2\,{}^t y + \left(\frac{7}{2}-6\alpha_1-3\alpha_2\right){}^{t-\Delta t}y + (8\alpha_1+3\alpha_2-6){}^{t-2\Delta t}y + \left(\frac{5}{2}-3\alpha_1-\alpha_2\right){}^{t-3\Delta t}y = {}^{t+\Delta t}\dot{y}\Delta t$$
$\alpha_1\alpha_2$

(6)
$$\alpha_2 \le -2\alpha_1 + \frac{3}{2}\alpha_2 > -\frac{18}{5}\alpha_1 + \frac{5}{2}$$
$\alpha_2\alpha_2 =$
$\frac{5}{2} - \frac{3}{2}\alpha_1$??

(7)
$$\alpha_1\,{}^{t+\Delta t}y + \left(\frac{5}{2}-3\alpha_1\right){}^t y + (3\alpha_1-4){}^{t-\Delta t}y + \left(\frac{3}{2}-\alpha_1\right){}^{t-2\Delta t}y = {}^{t+\Delta t}\dot{y}\Delta t$$
$\alpha_1 >$