\# Modeling with time truncation at t_c

$Model(k_x, z) = FT[model(x, z)]$

For all ω and all k_x

    $U(\omega, k_x) = 0.$

For $z = z_{max}, \ z_{max}-\Delta z, \ z_{max}-2\Delta z, \ \cdots, 0$ {

    For all ω {

        For all $|k_x| < |\omega|/v$ {

            if $(z < v \ t_c)$ {

                $sine = \sqrt{1 - z^2/v^2 t_c^2}$

                if($|v \ k_x| < |\omega| \ sine$)

                    $aperture = 1.$

                else

                    $aperture = 0.$

            }

        else

            $aperture = 0.$

        $U(\omega, k_x) = U(\omega, k_x) \ e^{-i \ \Delta z \ \omega \sqrt{v^{-2} - k_x^2/\omega^2}} + aperture \ * \ Model(k_x, z)$

        }

    }

}

$u(t, x) = FT \, 2D[U(\omega, k_x)]$