1 Equation 24 of the paper

$$P_k(\ell) \quad = \quad 2\pi \int_0^{\chi_s} d\chi \frac{w}{\mathcal{D}} P(\ell/\mathcal{D}; z) \tag{1}$$

where

$$w(\chi, \chi_s) = \frac{3\Omega_m H_0^2 \mathcal{D}(\chi)\mathcal{D}(\chi_s - \chi)}{2c^2 \mathcal{D}(\chi_s)}(1+z). \tag{2}$$

Therefore,

$$P_k(\ell) = 2\pi \left(\frac{9\Omega_m^2 H_0^4}{4c^4}\right) \int_0^{\chi_s} \left(\frac{\mathcal{D}(\chi_s - \chi)}{\mathcal{D}(\chi_s)}(1+z)\right)^2 P(\ell/\mathcal{D}; z) d\chi \tag{3}$$

Integral over redshift

$$P_k(\ell) = 2\pi \left(\frac{9\Omega_m^2 H_0^3}{4c^3}\right) \int_0^{z_s} \left(\frac{\mathcal{D}(\chi_s - \chi)}{\mathcal{D}(\chi_s)}(1+z)\right)^2 P(\ell/\mathcal{D}; z) \frac{dz}{E(z)} \tag{4}$$

where $E(z) = H(z)/H_0$.