sion for point force and moment tensor sources. Thus

$$
\begin{aligned}
u_z(r,z,h,\omega) &= (F_1\cos\phi \;+\; F_2\sin\phi)\,ZHF \;+\; F_3 ZVF \\
&\quad + M_{11}\left[\frac{ZSS}{2}\cos(2\phi) - \frac{ZDD}{6} + \frac{ZEX}{3}\right] \\
&\quad + M_{22}\left[\frac{-ZSS}{2}\cos(2\phi) - \frac{ZDD}{6} + \frac{ZEX}{3}\right] \\
&\quad + M_{33}\left[\frac{ZDD}{3} + \frac{ZEX}{3}\right] \\
&\quad + M_{12}\left[ZSS\ \sin(2\phi)\right] \\
&\quad + M_{13}\left[ZDS\ \cos(\phi)\right] \\
&\quad + M_{23}\left[ZDS\ \sin(\phi)\right] \\
u_r(r,z,h,\omega) &= (F_1\cos\phi \;+\; F_2\sin\phi)\,RHF \;+\; F_3 RVF \\
&\quad + M_{11}\left[\frac{RSS}{2}\cos(2\phi) - \frac{RDD}{6} + \frac{REX}{3}\right] \\
&\quad + M_{22}\left[\frac{-RSS}{2}\cos(2\phi) - \frac{RDD}{6} + \frac{REX}{3}\right] \\
&\quad + M_{33}\left[\frac{RDD}{3} + \frac{REX}{3}\right] \\
&\quad + M_{12}\left[RSS\ \sin(2\phi)\right] \\
&\quad + M_{13}\left[RDS\ \cos(\phi)\right] \\
&\quad + M_{23}\left[RDS\ \sin(\phi)\right] \\
u_\phi(r,z,h,\omega) &= (-F_1\sin\phi + F_2\cos\phi)\,THF \\
&\quad + M_{11}\left[\frac{TSS}{2}\sin(2\phi)\right] \\
&\quad + M_{22}\left[\frac{-TSS}{2}\sin(2\phi)\right] \\
&\quad + M_{12}\left[-TSS\ \cos(2\phi)\right] \\
&\quad + M_{13}\left[TDS\ \sin(\phi)\right] \\
&\quad + M_{23}\left[-TDS\ \cos(\phi)\right]\ .
\end{aligned}
\tag{5.5.1}
$$

where

$$
\begin{aligned}
ZDD &= \frac{-1}{4\pi\rho(i\omega)^2}\left[3\frac{\partial^3 F_\alpha}{\partial z^3} + k_\alpha^2\frac{\partial F_\alpha}{\partial z} - 3\frac{\partial^3 F_\beta}{\partial z^3} - 3k_\beta^2\frac{\partial F_\beta}{\partial z}\right] \\
RDD &= \frac{-1}{4\pi\rho(i\omega)^2}\left[3\frac{\partial^3 F_\alpha}{\partial z^2\partial r} - 3\frac{\partial^3 F_\beta}{\partial z^2\partial r} + k_\alpha^2\frac{\partial F_\alpha}{\partial r}\right] \\
ZDS &= \frac{-1}{4\pi\rho(i\omega)^2}\left[2\frac{\partial^3 F_\alpha}{\partial z^2\partial r} - 2\frac{\partial^3 F_\beta}{\partial z^2\partial r} - k_\beta^2\frac{\partial F_\beta}{\partial r}\right]
\end{aligned}
$$