

Natural Frequency $\omega_0 = 2\pi f_0$ ( $= \omega_d$ for lightly damped resonances)											
Unknown	$\Delta\omega =$	$\Delta f =$	$f_d =$	$\eta =$	$\zeta =$	$Q =$	$\sigma =$	$\tau =$	$T_{60} =$	$D =$	$\delta =$
Known											
3dB Bandwidth $\Delta\omega$ [Rad/s]	$\Delta\omega$	$\frac{\Delta\omega}{2\pi}$	$\frac{\Delta\omega}{4\pi}$	$\frac{\Delta\omega}{\omega_0}$	$\frac{\Delta\omega}{2\omega_0}$	$\frac{\omega_0}{\Delta\omega}$	$\frac{\Delta\omega}{2}$	$\frac{2}{\Delta\omega}$	$\frac{13.8}{\Delta\omega}$	$4.34\Delta\omega$	$\frac{\pi\Delta\omega}{\omega_0}$
3dB Bandwidth $\Delta f$ [Hz]	$2\pi\Delta f$	$\Delta f$	$\frac{\Delta f}{2}$	$\frac{\Delta f}{f_0}$	$\frac{\Delta f}{2f_0}$	$\frac{f_0}{\Delta f}$	$\pi\Delta f$	$\frac{1}{\pi\Delta f}$	$\frac{6.9}{\pi\Delta f}$	$27.3\Delta f$	$\frac{\pi\Delta f}{f_0}$
Damping frequency $f_d$ [Hz]	$4\pi f_d$	$2f_d$	$f_d$	$\frac{2f_d}{f_0}$	$\frac{f_d}{f_0}$	$\frac{f_0}{2f_d}$	$2\pi f_d$	$\frac{1}{2\pi f_d}$	$\frac{1.1}{f_d}$	$54.6f_d$	$\frac{2\pi f_d}{f_0}$
Loss Factor $\eta$	$\eta\omega_0$	$\eta f_0$	$\frac{\eta f_0}{2}$	$\eta$	$\frac{\eta}{2}$	$\frac{1}{\eta}$	$\eta\pi f_0$	$\frac{1}{\pi f_0\eta}$	$\frac{2.2}{\eta f_0}$	$4.34\omega_0\eta$	$\eta\pi$
Fraction of critical damping $\zeta$	$2\zeta\omega_0$	$2\zeta f_0$	$2\zeta f_0$	$2\zeta$	$\zeta$	$\frac{1}{2\zeta}$	$2\pi f_0\zeta$	$\frac{1}{2\pi f_0\zeta}$	$\frac{1.1}{\zeta f_0}$	$8.69\omega_0\zeta$	$2\pi\zeta$
Quality factor $Q$	$\frac{\omega_0}{Q}$	$\frac{f_0}{Q}$	$\frac{f_0}{2Q}$	$\frac{1}{Q}$	$\frac{1}{2Q}$	$Q$	$\frac{\omega_0}{2Q}$	$\frac{2Q}{\omega_0}$	$\frac{22Q}{f_0}$	$\frac{4.34\omega_0}{Q}$	$\frac{\pi}{Q}$
Decay constant $\sigma$ [ $s^{-1}$ ]	$2\sigma$	$\frac{\sigma}{\pi}$	$\frac{\sigma}{2\pi}$	$\frac{2\sigma}{\omega_0}$	$\frac{\sigma}{\omega_0}$	$\frac{\omega_0}{2\sigma}$	$\sigma$	$\frac{1}{\sigma}$	$\frac{6.9}{\sigma}$	$8.69\sigma$	$\frac{\sigma}{f_0}$
Time constant $\tau$ [s]	$\frac{2}{\tau}$	$\frac{1}{\pi\tau}$	$\frac{1}{2\pi\tau}$	$\frac{1}{\pi f_0\tau}$	$\frac{1}{2\pi f_0\tau}$	$\pi f_0\tau$	$\frac{1}{\tau}$	$\tau$	$6.9\tau$	$\frac{8.69}{\tau}$	$\frac{1}{f_0\tau}$
Reverberation time $T_{60}$ [s]	$\frac{13.8}{T_{60}}$	$\frac{2.2}{T_{60}}$	$\frac{1.1}{f_0 T_{60}}$	$\frac{2.2}{f_0 T_{60}}$	$\frac{1.1}{f_0 T_{60}}$	$\frac{f_0 T_{60}}{2.2}$	$\frac{6.9}{T_{60}}$	$\frac{T_{60}}{6.9}$	$T_{60}$	$\frac{60}{T_{60}}$	$\frac{6.9}{f_0 T_{60}}$
Decay rate $D$ [dB/s]	$\frac{D}{4.34}$	$\frac{D}{27.3}$	$\frac{D}{54.6}$	$\frac{D}{4.34\omega_0}$	$\frac{D}{8.69\omega_0}$	$\frac{4.34\omega_0}{D}$	$\frac{D}{8.69}$	$\frac{8.69}{D}$	$\frac{60}{D}$	$D$	$\frac{D}{8.69f_0}$
The logarithmic decrement $\delta$	$\frac{\delta\omega_0}{\pi}$	$\frac{\delta f_0}{\pi}$	$\frac{\delta f_0}{2\pi}$	$\frac{\delta}{\pi}$	$\frac{\delta}{2\pi}$	$\frac{\pi}{\delta}$	$\delta f_0$	$\frac{1}{\delta f_0}$	$\frac{6.9}{\delta f_0}$	$8.69f_0\delta$	$\delta$

Table 1. Interrelations between measures of damping