$$
\begin{aligned}
f\_v2\left(\kappa\,,f'\,,T_{pi}\right):=\; & 1-\frac{\sin\left(4\,\pi\cdot f'\cdot T_{pi}-2\,\gamma\left(\kappa\,,f'\right)\right)+\sin\left(2\cdot\gamma\left(\kappa\,,f'\right)\right)}{4\,\pi\cdot f'\cdot T_{pi}}+\frac{f'\cdot\tau\left(\kappa\,,f'\right)}{f'\cdot T_{pi}}\left(1-e^{-\frac{2\cdot f'\cdot T_{pi}}{f'\cdot\tau\left(\kappa\,,f'\right)}}\right)\cdot\sin\left(\gamma\left(\kappa\,,f'\right)\right)^2 \\[2mm]
& -\frac{8\,\pi\cdot f'\cdot\tau\left(\kappa\,,f'\right)\cdot\sin\left(\gamma\left(\kappa\,,f'\right)\right)}{1+\left(2\,\pi\cdot f'\cdot\tau\left(\kappa\,,f'\right)\right)^2}\left[\begin{array}{l}\left(2\,\pi\cdot f'\cdot\tau\left(\kappa\,,f'\right)\cdot\dfrac{\cos\left(2\,\pi\cdot f'\cdot T_{pi}-\gamma\left(\kappa\,,f'\right)\right)}{2\,\pi\cdot f'\cdot T_{pi}}+\dfrac{\sin\left(2\,\pi\cdot f'\cdot T_{pi}-\gamma\left(\kappa\,,f'\right)\right)}{2\,\pi\cdot f'\cdot T_{pi}}\right)\cdot e^{-\frac{f'\cdot T_{pi}}{f'\cdot\tau\left(\kappa\,,f'\right)}} \\[2mm] +\dfrac{\sin\left(\gamma\left(\kappa\,,f'\right)\right)-2\,\pi\cdot f'\cdot\tau\left(\kappa\,,f'\right)\cdot\cos\left(\gamma\left(\kappa\,,f'\right)\right)}{2\,\pi\cdot f'\cdot T_{pi}}\end{array}\right]
\end{aligned}
$$

$$f\_v1\left(\kappa\,,f'\,,T_{pi}\right):=f'\cdot T_{pi}\cdot\sqrt{f\_v2\left(\kappa\,,f'\,,T_{pi}\right)}$$

$f':=50\ Hz$ $\kappa:=1.18$

$T_{pi}:=0.008\ s$

$$f\_v2\left(\kappa\,,f'\,,T_{pi}\right)=1.1$$
$$f\_v1\left(\kappa\,,f'\,,T_{pi}\right)=0.419$$

$f':=1\ Hz\,,2\ Hz\,..500\ Hz$
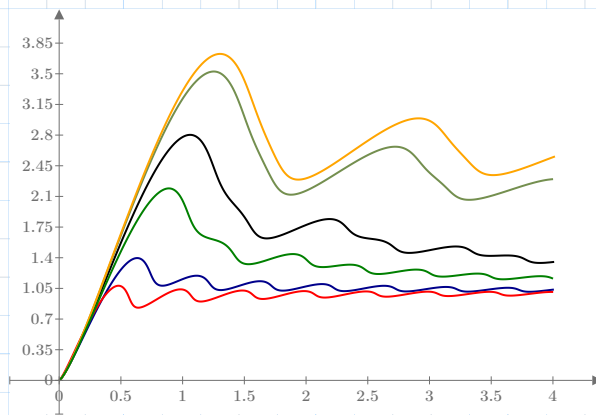
$f\_v1\left(\kappa\,,f'\,,T_{pi}\right)$

$f\_v1\left(1.7\,,f'\,,T_{pi}\right)$

$f\_v1\left(1.03\,,f'\,,T_{pi}\right)$

$f\_v1\left(1.9\,,f'\,,T_{pi}\right)$

$f\_v1\left(1.95\,,f'\,,T_{pi}\right)$

$f\_v1\left(1.5\,,f'\,,T_{pi}\right)$

$f\_v2\left(\kappa\,,f'\,,T_{pi}\right)$

$f\_v2\left(1.7\,,f'\,,T_{pi}\right)$

$f\_v2\left(1.03\,,f'\,,T_{pi}\right)$

$f\_v2\left(1.9\,,f'\,,T_{pi}\right)$

$f\_v2\left(1.95\,,f'\,,T_{pi}\right)$

$f\_v2\left(1.5\,,f'\,,T_{pi}\right)$

$$we\_logGrid\left(axis\,,x1\,,x2\,,step\,,y1\,,y2\right) := \begin{Vmatrix} G \leftarrow \begin{bmatrix} NaN & NaN \end{bmatrix} \\ x1 \leftarrow \text{floor}\left(\log\left(x1\right)\right) \\ x2 \leftarrow \text{ceil}\left(\log\left(x2\right)\right) \\ \text{for } i \in x1 \mathrel{..} x2 \\ \quad \begin{Vmatrix} \text{for } j \in 1, 1+step \mathrel{..} 10 \\ \quad \begin{Vmatrix} x \leftarrow j \cdot 10^i \\ G \leftarrow \text{stack}\left(G, \begin{bmatrix} x & y1 \\ x & y2 \\ NaN & NaN \end{bmatrix}\right) \end{Vmatrix} \end{Vmatrix} \\ \text{if } axis = \text{``y''} \\ \quad \begin{Vmatrix} G \leftarrow \text{augment}\left(G^{\langle\mathbf{ORIGIN}+1\rangle}, G^{\langle\mathbf{ORIGIN}\rangle}\right) \end{Vmatrix} \\ G \end{Vmatrix}$$

$$we\_Grid\left(axis\,,x1\,,x2\,,step\,,y1\,,y2\right) := \begin{Vmatrix} G \leftarrow \begin{bmatrix} NaN & NaN \end{bmatrix} \\ n \leftarrow \dfrac{x2-x1}{step} \\ \text{for } i \in 0 \mathrel{..} n \\ \quad \begin{Vmatrix} x \leftarrow x1 + i \cdot step \\ G \leftarrow \text{stack}\left(G, \begin{bmatrix} x & y1 \\ x & y2 \\ NaN & NaN \end{bmatrix}\right) \end{Vmatrix} \\ \text{if } axis = \text{``y''} \\ \quad \begin{Vmatrix} G \leftarrow \text{augment}\left(G^{\langle\mathbf{ORIGIN}+1\rangle}, G^{\langle\mathbf{ORIGIN}\rangle}\right) \end{Vmatrix} \\ G \end{Vmatrix}$$

$$G := \text{stack}\left(we\_Grid\left(\text{``x''},0\,,4\,,0.5\,,0\,,4\right), we\_Grid\left(\text{``y''},0\,,4\,,0.5\,,0\,,4\right)\right)$$

$T_{pi} := 5\ \boldsymbol{ms}$

$$v\left(\kappa\right) := \begin{Vmatrix} \text{for } f \in 1\ \boldsymbol{Hz}, 5\ \boldsymbol{Hz} \mathrel{..} 1\ \boldsymbol{kHz} \\ \quad \begin{Vmatrix} R^{\text{rows}\frown(R)} \leftarrow \begin{bmatrix} f\_v1\left(\kappa\,,f\,,T_{pi}\right) & f\_v2\left(\kappa\,,f\,,T_{pi}\right) \end{bmatrix} \end{Vmatrix} \\ \text{stack}\left(R, \begin{bmatrix} NaN & NaN \end{bmatrix}\right) \end{Vmatrix}$$

$$All := \text{stack}\left(v\left(1.03\right), v\left(1.3\right), v\left(1.5\right), v\left(1.7\right), v\left(1.8\right), v\left(1.9\right), v\left(1.95\right)\right)$$

$G^{\langle 1 \rangle}$

$All^{\langle 1 \rangle}$

$G^{\langle 0 \rangle}$

$All^{\langle 0 \rangle}$