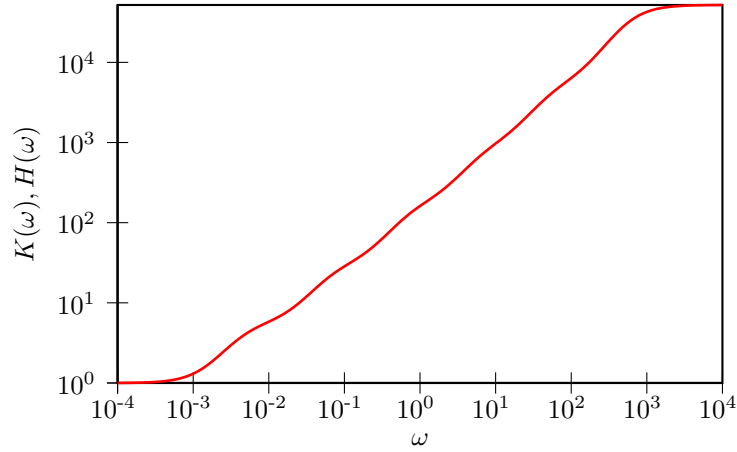


# GENERALIZED LANGEVIN EQUATION ANALYTICS

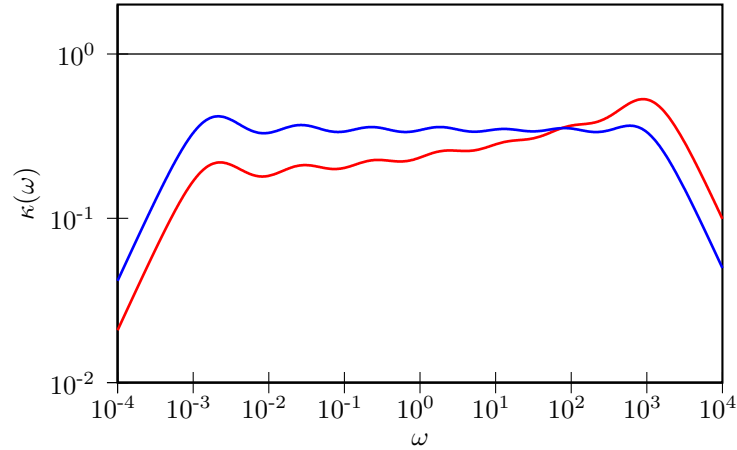
- Drift matrix  $A_p$ :

$$\begin{pmatrix} 5.0070 \times 10^{+02} & 1.9158 \times 10^{-02} & 1.2034 \times 10^{-01} & -8.5971 \times 10^{-01} & 6.4295 \times 10^{+00} & 4.4103 \times 10^{+01} & 4.7394 \times 10^{+02} \\ 4.4753 \times 10^{-03} & 3.4414 \times 10^{-03} & -1.8532 \times 10^{-03} & 1.2215 \times 10^{-02} & 7.6580 \times 10^{-03} & -9.7319 \times 10^{-04} & 1.0133 \times 10^{-02} \\ 1.0625 \times 10^{-01} & 1.8532 \times 10^{-03} & 5.5006 \times 10^{-02} & 3.2070 \times 10^{-03} & 8.7582 \times 10^{-04} & 3.0212 \times 10^{-03} & -5.8245 \times 10^{-03} \\ -9.6748 \times 10^{-01} & -1.2215 \times 10^{-02} & -3.2070 \times 10^{-03} & 6.0095 \times 10^{-01} & 1.1076 \times 10^{-03} & -2.5721 \times 10^{-03} & 7.6902 \times 10^{-03} \\ 6.2456 \times 10^{+00} & -7.6580 \times 10^{-03} & -8.7582 \times 10^{-04} & -1.1076 \times 10^{-03} & 5.5702 \times 10^{+00} & -1.6503 \times 10^{-02} & 1.7621 \times 10^{-02} \\ 4.3941 \times 10^{+01} & 9.7319 \times 10^{-04} & -3.0212 \times 10^{-03} & 2.5721 \times 10^{-03} & 1.6503 \times 10^{-02} & 4.5347 \times 10^{+01} & -1.8325 \times 10^{-01} \\ 4.7777 \times 10^{+02} & -1.0133 \times 10^{-02} & 5.8245 \times 10^{-03} & -7.6902 \times 10^{-03} & -1.7621 \times 10^{-02} & 1.8325 \times 10^{-01} & 5.0422 \times 10^{+02} \end{pmatrix}$$

- Fluctuation-Dissipation theorem is enforced,  $C_p = k_B T$
- Memory kernel FT,  $K(\omega)/K(0) = H(\omega)/H(0)$



- Sampling efficiency, for  $q^2$  and  $p^2 + \omega^2 q^2$ :



- Free-particle diffusion coeff. ( $mD/k_B T$ ):  $1.0438 \times 10^{+02}$