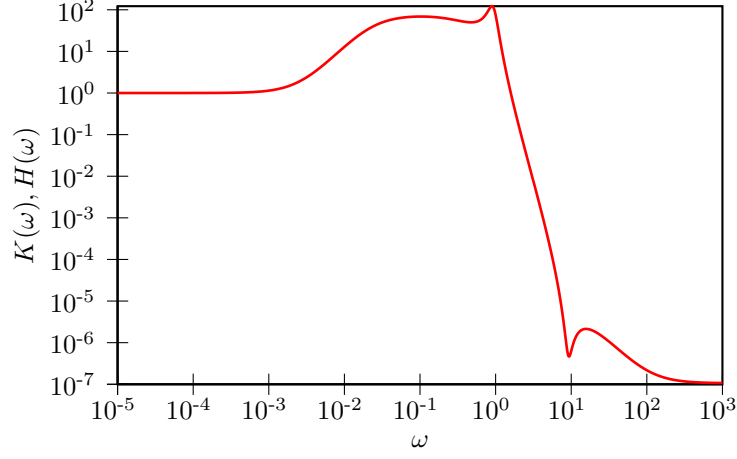# GENERALIZED LANGEVIN EQUATION ANALYTICS
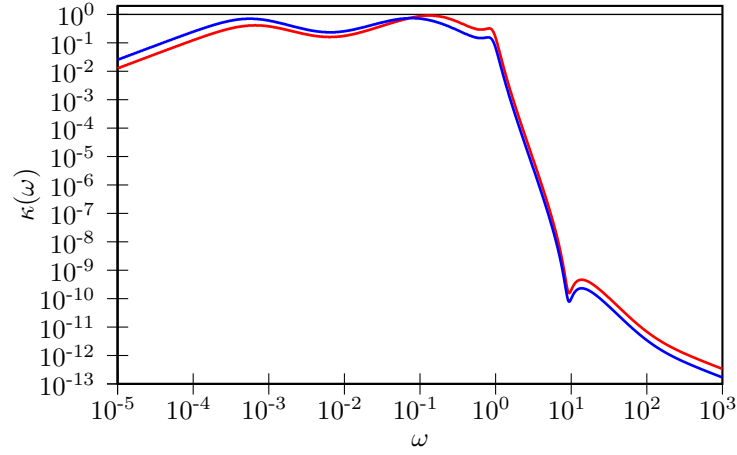
- **Drift matrix $\mathbf{A}_p$:**

$$
\begin{pmatrix}
1.6726 \times 10^{-10} & 4.5851 \times 10^{-02} & 2.7436 \times 10^{-01} & 2.2275 \times 10^{-02} & 1.6059 \times 10^{-03} \\
-4.5851 \times 10^{-02} & 9.6524 \times 10^{-07} & -7.4504 \times 10^{-03} & 1.0314 \times 10^{-01} & 1.1853 \times 10^{-01} \\
-2.7436 \times 10^{-01} & 7.4504 \times 10^{-03} & 5.0592 \times 10^{-07} & 7.1218 \times 10^{-01} & -7.4853 \times 10^{-02} \\
-2.2275 \times 10^{-02} & -1.0314 \times 10^{-01} & -7.1218 \times 10^{-01} & 1.1973 \times 10^{-05} & 6.8035 \times 10^{-01} \\
-1.6054 \times 10^{-03} & -1.1853 \times 10^{-01} & 7.4853 \times 10^{-02} & -6.8035 \times 10^{-01} & 6.7889 \times 10^{-01}
\end{pmatrix}
$$

- **Fluctuation-Dissipation theorem is enforced, $\mathbf{C}_p = k_B T$**

- **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. $(mD/k_B T)$: $6.3320 \times 10^{+02}$**