# GENERALIZED LANGEVIN EQUATION ANALYTICS

- **Drift matrix $\mathbf{A}_p$:**

$$
\begin{pmatrix}
1.0000\times10^{-10} & 7.3486\times10^{-02} & 5.7111\times10^{-01} & 3.9168\times10^{-01} & 9.0607\times10^{-02} \\
-7.3486\times10^{-02} & 1.6991\times10^{-04} & 1.8403\times10^{-01} & 1.4570\times10^{-02} & -6.9924\times10^{-03} \\
-5.7111\times10^{-01} & -1.8403\times10^{-01} & 2.3323\times10^{-03} & -7.6271\times10^{-01} & -7.5177\times10^{-01} \\
-3.9168\times10^{-01} & -1.4570\times10^{-02} & 7.6271\times10^{-01} & 1.2785\times10^{-01} & -1.0023\times10^{+00} \\
-9.0615\times10^{-02} & 6.9924\times10^{-03} & 7.5177\times10^{-01} & 1.0023\times10^{+00} & 2.2669\times10^{+00}
\end{pmatrix}
$$

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

- **Memory kernel FT, $K(\omega)/K(0) = H(\omega)/H(0)$**
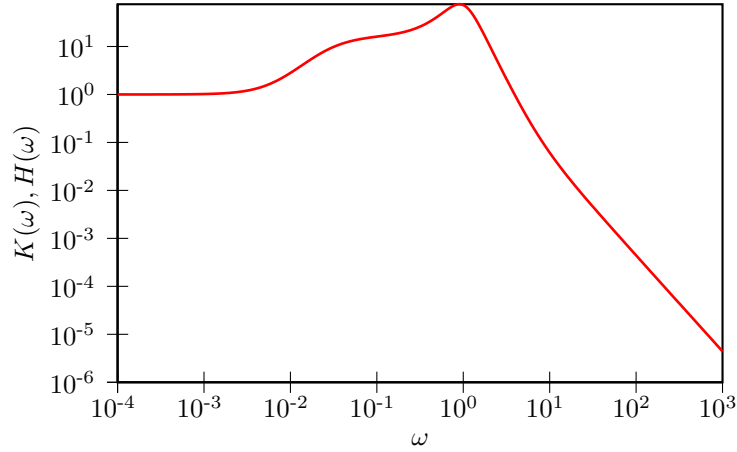
- **Sampling efficiency, for q^2 and $p^2 + \omega^2 q^2$:**
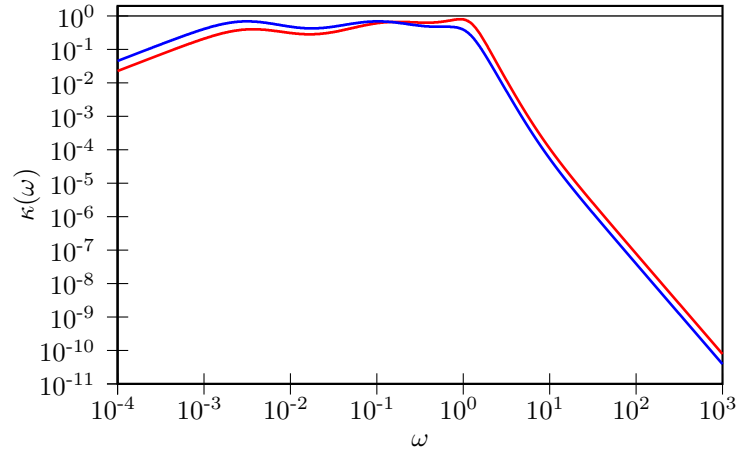
- **Free-particle diffusion coeff. $(mD/k_B T)$: $1.1301 \times 10^{+02}$**