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

$$
\begin{pmatrix}
9.6442\times10^{+00} & -6.4968\times10^{-02} & 3.9251\times10^{-01} & -2.2083\times10^{+00} & 4.9949\times10^{+00} \\
1.0647\times10^{-01} & 1.6893\times10^{-03} & -4.5625\times10^{-02} & -7.0878\times10^{-02} & 4.9061\times10^{-02} \\
2.9663\times10^{-01} & 4.5625\times10^{-02} & 1.3950\times10^{-01} & 2.1337\times10^{-01} & 2.1866\times10^{-01} \\
-6.1482\times10^{-01} & 7.0878\times10^{-02} & -2.1337\times10^{-01} & 1.1665\times10^{+00} & 6.8657\times10^{-01} \\
5.4190\times10^{+00} & -4.9061\times10^{-02} & -2.1866\times10^{-01} & -6.8657\times10^{-01} & 3.9705\times10^{+00}
\end{pmatrix}
$$

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

- **Memory kernel FT, $K(\omega)/K(0) = H(\omega)/H(0)$**
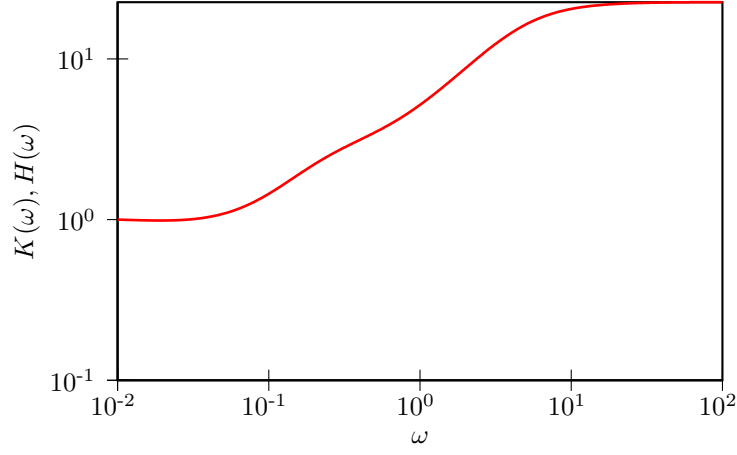
- **Sampling efficiency, for q^2 and $p^2 + \omega^2 q^2$:**
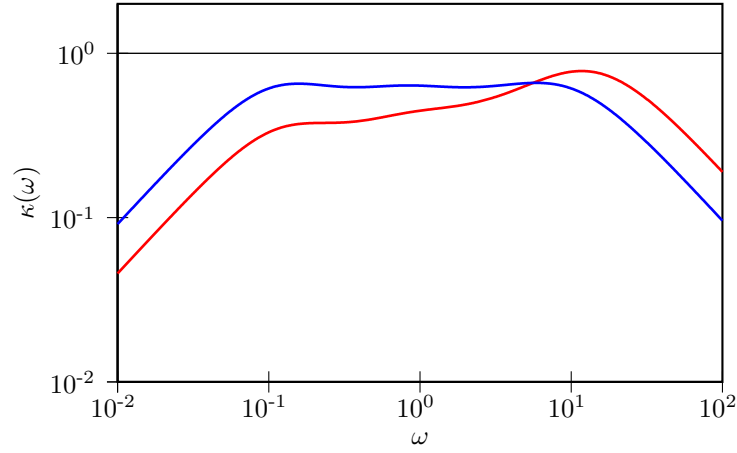
- **Free-particle diffusion coeff. $(mD/k_B T)$:** $2.2928 \times 10^{+00}$