

GENERALIZED LANGEVIN EQUATION ANALYTICS

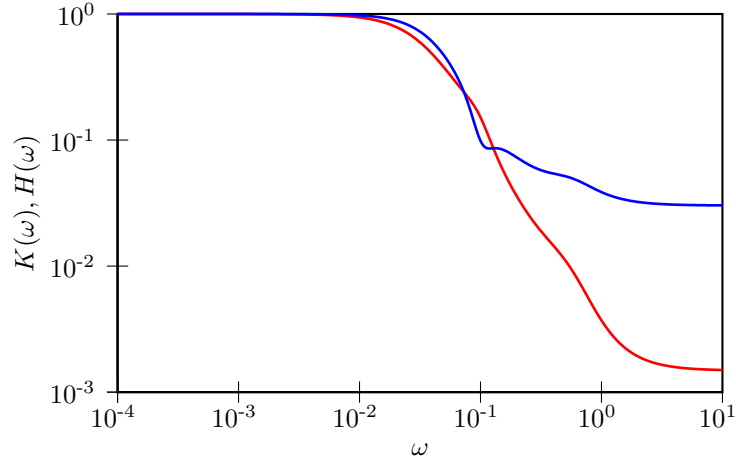
- Drift matrix A_p :

$$\begin{pmatrix} 4.9701 \times 10^{-04} & 5.9592 \times 10^{-02} & 3.9207 \times 10^{-02} & 5.6371 \times 10^{-02} & 6.4388 \times 10^{-02} & 3.2987 \times 10^{-02} & 1.9273 \times 10^{-02} \\ -6.0970 \times 10^{-02} & 2.5939 \times 10^{-02} & 8.3992 \times 10^{-02} & -1.0857 \times 10^{-02} & -2.8399 \times 10^{-03} & 8.3932 \times 10^{-03} & -8.4703 \times 10^{-02} \\ -3.6983 \times 10^{-02} & -8.3992 \times 10^{-02} & 2.6567 \times 10^{-02} & 1.4582 \times 10^{-02} & 3.9610 \times 10^{-02} & 1.4023 \times 10^{-02} & -4.1564 \times 10^{-02} \\ -5.6460 \times 10^{-02} & 1.0857 \times 10^{-02} & -1.4582 \times 10^{-02} & 3.0378 \times 10^{-02} & 1.1193 \times 10^{-03} & 3.8127 \times 10^{-02} & 1.9482 \times 10^{-02} \\ -6.2594 \times 10^{-02} & 2.8399 \times 10^{-03} & -3.9610 \times 10^{-02} & -1.1193 \times 10^{-03} & 3.3182 \times 10^{-02} & -4.4030 \times 10^{-02} & 1.2405 \times 10^{-01} \\ -1.6573 \times 10^{-02} & -8.3932 \times 10^{-03} & -1.4023 \times 10^{-02} & -3.8127 \times 10^{-02} & 4.4030 \times 10^{-02} & 3.0116 \times 10^{-01} & -4.1419 \times 10^{-01} \\ -3.8236 \times 10^{-02} & 8.4703 \times 10^{-02} & 4.1564 \times 10^{-02} & -1.9482 \times 10^{-02} & -1.2405 \times 10^{-01} & 4.1419 \times 10^{-01} & 4.8804 \times 10^{-01} \end{pmatrix}$$

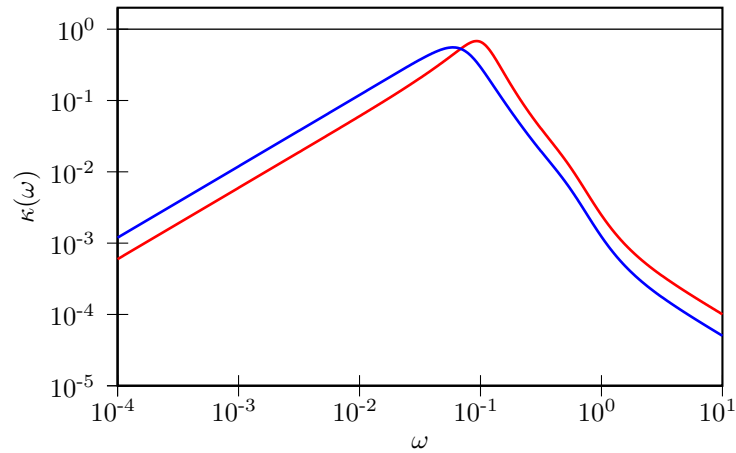
- Free-particle covariance matrix C_p :

$$\begin{pmatrix} 1.0000 \times 10^{+00} & 1.9792 \times 10^{-02} & 7.1479 \times 10^{-01} & 1.9610 \times 10^{-01} & -3.7327 \times 10^{-01} & -2.2645 \times 10^{-01} & 4.5993 \times 10^{-02} \\ 1.9792 \times 10^{-02} & 1.2606 \times 10^{+00} & -1.9315 \times 10^{-01} & -7.2626 \times 10^{-01} & -5.4977 \times 10^{-01} & -2.1857 \times 10^{-01} & 1.2779 \times 10^{-01} \\ 7.1479 \times 10^{-01} & -1.9315 \times 10^{-01} & 2.4419 \times 10^{+00} & 7.2950 \times 10^{-01} & -1.2349 \times 10^{+00} & -1.1284 \times 10^{-01} & -1.6092 \times 10^{-02} \\ 1.9610 \times 10^{-01} & -7.2626 \times 10^{-01} & 7.2950 \times 10^{-01} & 2.3201 \times 10^{+00} & -1.2101 \times 10^{+00} & 5.6765 \times 10^{-01} & -2.0244 \times 10^{-01} \\ -3.7327 \times 10^{-01} & -5.4977 \times 10^{-01} & -1.2349 \times 10^{+00} & -1.2101 \times 10^{+00} & 4.7929 \times 10^{+00} & 3.7492 \times 10^{-01} & 1.1779 \times 10^{-02} \\ -2.2645 \times 10^{-01} & -2.1857 \times 10^{-01} & -1.1284 \times 10^{-01} & 5.6765 \times 10^{-01} & 3.7492 \times 10^{-01} & 4.9645 \times 10^{+00} & -5.3587 \times 10^{-01} \\ 4.5993 \times 10^{-02} & 1.2779 \times 10^{-01} & -1.6092 \times 10^{-02} & -2.0244 \times 10^{-01} & 1.1779 \times 10^{-02} & -5.3587 \times 10^{-01} & 1.4817 \times 10^{+00} \end{pmatrix}$$

- Fourier-transform of memory kernels $K(\omega)/K(0)$ and $H(\omega)/H(0)$



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



- Free-particle diffusion coeff. (mD/k_BT): $2.9814 \times 10^{+00}$
- ω -dependent fluctuations, $\omega^2 \langle q^2 \rangle$ and $\langle p^2 \rangle$

