Supporting Information for:

Extraction of "hidden" relaxation times from AC susceptibility data

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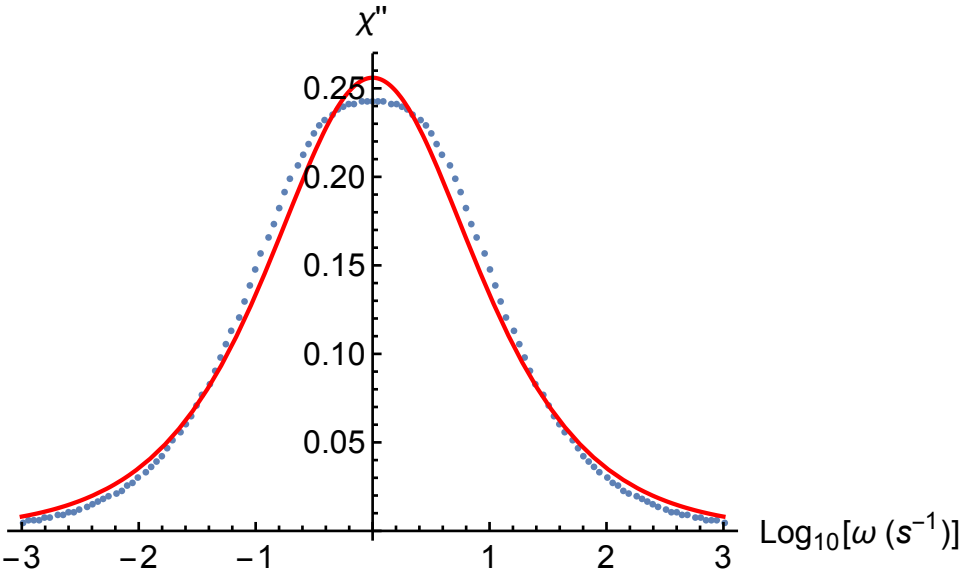

Figure S1. Best fit (red line; reduced R^2 = 0.996) of SGD model for underlying DGD data (blue points) with $s = 0.5$ and $\alpha = 0.2$, $\chi_S = 0.1$, $\chi_T = 1$, $\tau_{\mu,1} = 10^{-s}$ and $\tau_{\mu,2} = 10^{s}$.

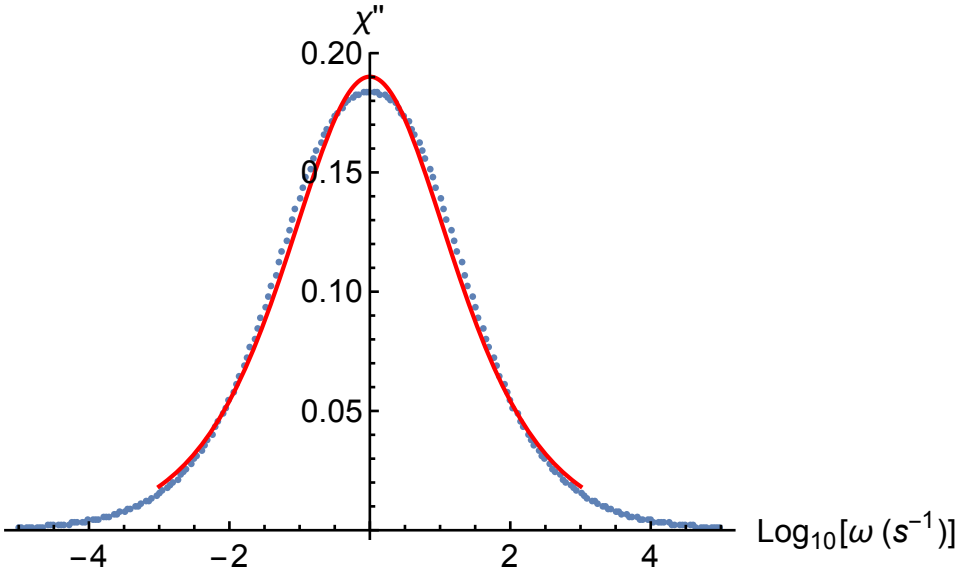

Figure S2. Best fit (red line; reduced R^2 = 0.998) of SGD model for underlying DGD data (blue points) with $s = 0.62$ and $\alpha = 0.4$, $\chi_S = 0.1$, $\chi_T = 1$, $\tau_{\mu,1} = 10^{-s}$ and $\tau_{\mu,2} = 10^{s}$.

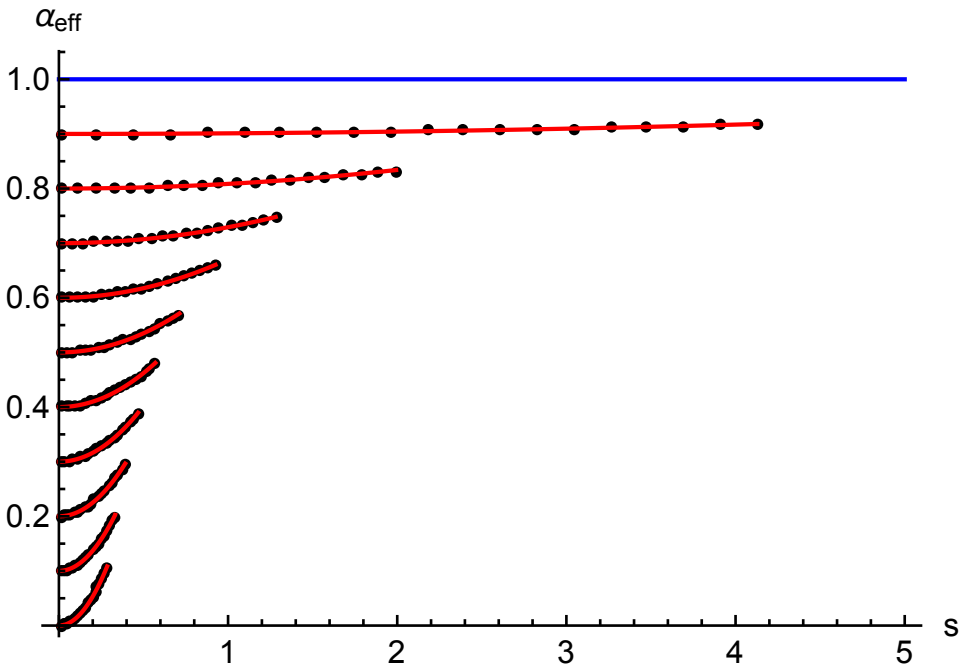

Figure S3. Contours of the effective distribution parameter for a SGD model describing an underlying bi-modal distribution given by the DGD model (black points). Red lines are quadratic fits $\alpha_{eff} = A_a s^2 + \alpha$. Blue line is defined as $A_1 = 0$.

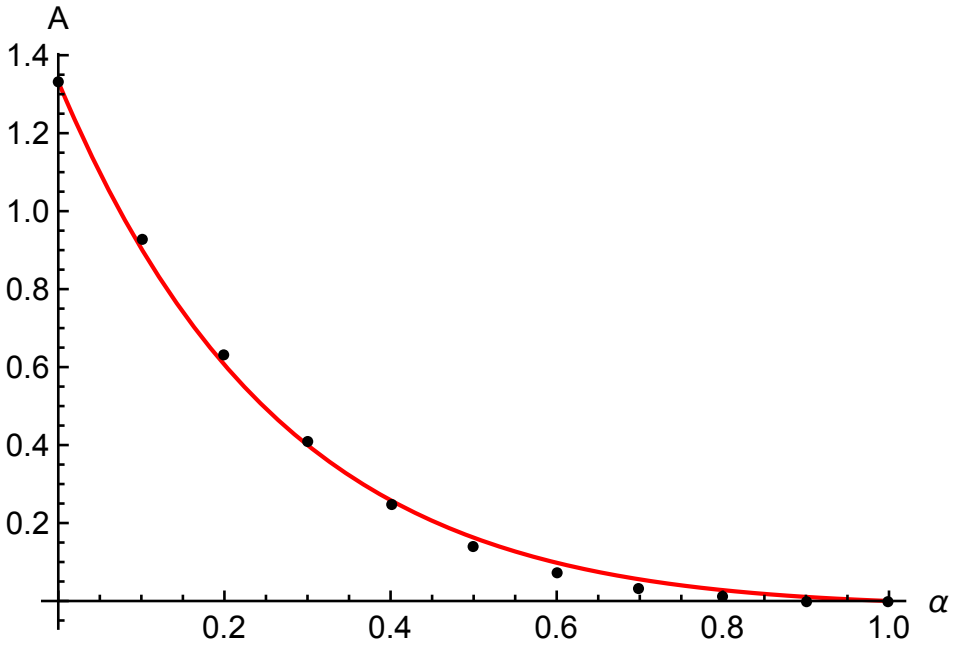

Figure S4. Quadratic coefficients from best fits of data in Figure S3, as a function of α, where $A_1 = 0$.

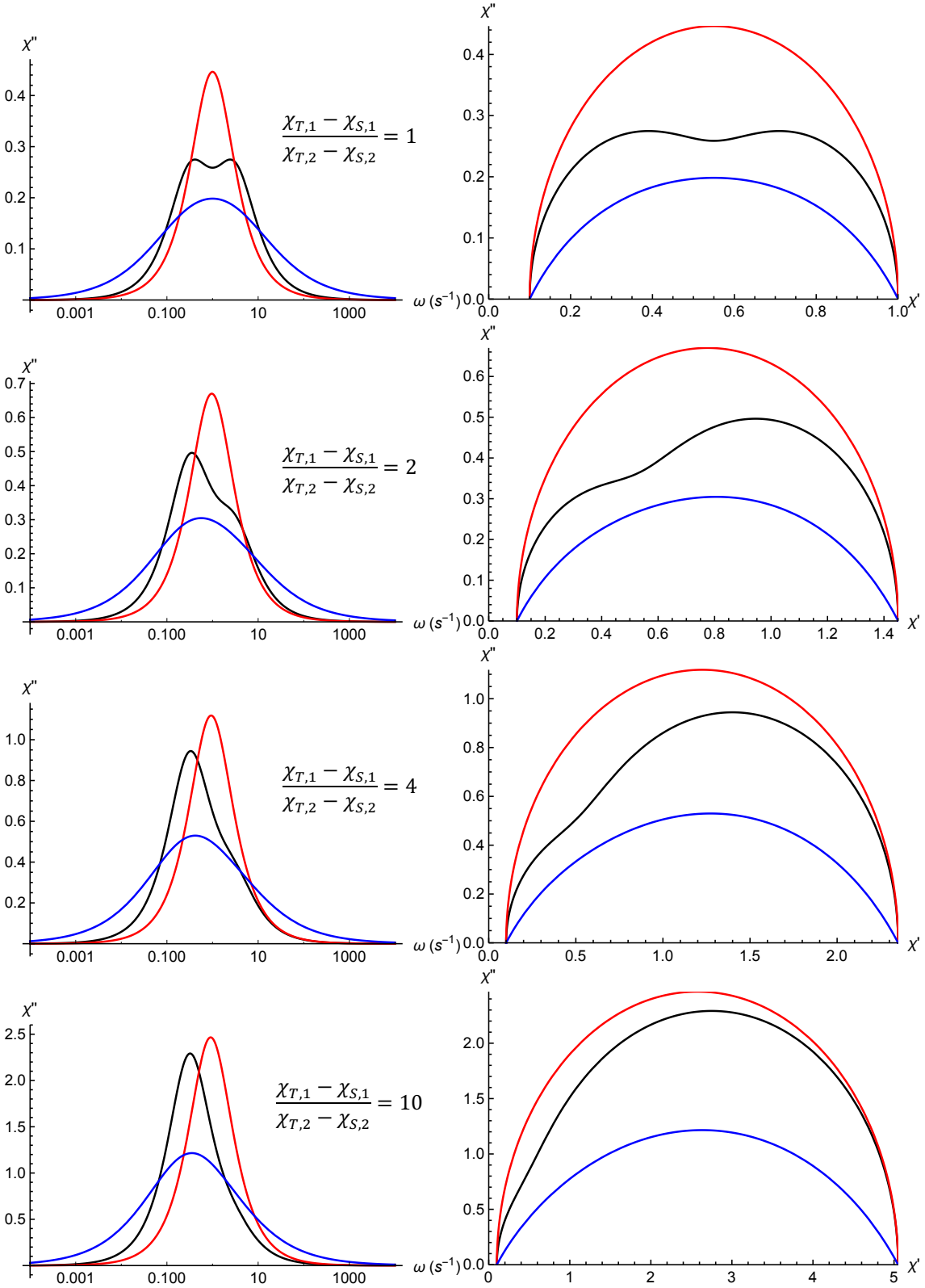

Figure S5. Out-of-phase AC susceptibility (left column) and Cole-Cole plots (right column) for DGD models with parameters $s = 0.5$ and $\alpha = 0.001$ (black), $s = 0.05$ and $\alpha = 0.001$ (red), and $s = 0.5$ and $\alpha = 0.4$ (blue). $\chi_{T,2} - \chi_{S,2} = 0.45$, $\tau_{\mu,1} = 10^{-s}$ and $\tau_{\mu,2} = 10^{s}$ in all cases. Note that when using the inverse ratios, the peak at $\tau_{\mu,2} = 10^{s}$ is dominant.