

## An electroelastic constitutive model for dielectric elastomers based on the Langevin statistic and its instability characteristics

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<b>Abstract</b>	An electroelastic constitutive model for dielectric elastomers based on the Langevin statistic is proposed in this paper. We start by deriving the Gibbs energy for electroelastic processes to obtain the Langevin function representing statistical configuration of polymer chain segments. To make a closed-form solution possible, we use the average stretch given by the 8-chain model to express the proposed model for the evaluation of its instability characteristics. We find that our proposed model can capture well the experimental data from the homogeneous responses and the instability characteristics.
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