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Evaluation of multifidelity surrogate modeling techniques to construct closure laws for drag in shock-particle interactions

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## Highlights

- Multifidelity methods can be used for bridging scales in multiscale modeling.
- The computational cost of building surrogates is reduced by orders of magnitude.
- The surrogate is within 8% accuracy of high-fidelity surrogates, but is cheaper.
- The method is useful for higher dimensional surrogates/expensive mesoscale simulations.
- The method is illustrated for surrogates for drag in shock-particle interactions.

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