
Supplementary information

**Experimental discovery of structure–
property relationships in ferroelectric
materials via active learning**

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Supplementary Information

**Experimental discovery of structure-property relationships in ferroelectric materials
via active learning**

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Supplementary Video 1. DKL reconstruction of coercive field based on a part of randomly sampled points. This video shows the effect of random sampling points on the DKL reconstruction of coercive field.

Supplementary Video 2. DKL reconstruction of off field loop area based on a part of randomly sampled points. This video shows the effect of random sampling points on the DKL reconstruction of off-field loop area.

Supplementary Video 3. DKL reconstruction of off field loop width based on a part of randomly sampled points. This video shows the effect of random sampling points on the DKL reconstruction of off-field loop width.

Supplementary Video 4. DKL reconstruction of positive coercive field based on a part of randomly sampled points. This video shows the effect of random sampling points on the DKL reconstruction of positive coercive field.

Supplementary Video 5. DKL reconstruction of negative coercive field based on a part of randomly sampled points. This video shows the effect of random sampling points on the DKL reconstruction of negative coercive field.

Supplementary Video 6. DKL-BO experiment process of off-field loop area discovery shown as a video of the acquisition function values and label of next measurement, the black cross in the video indicates the next measurement point. The acquisition function is guided by off-field loop area.

Supplementary Video 7. DKL-BO experiment process of on-field loop area discovery shown as a video of the acquisition function values and label of next measurement, the black cross in the video indicates the next measurement point. The acquisition function is guided by on-field loop area.

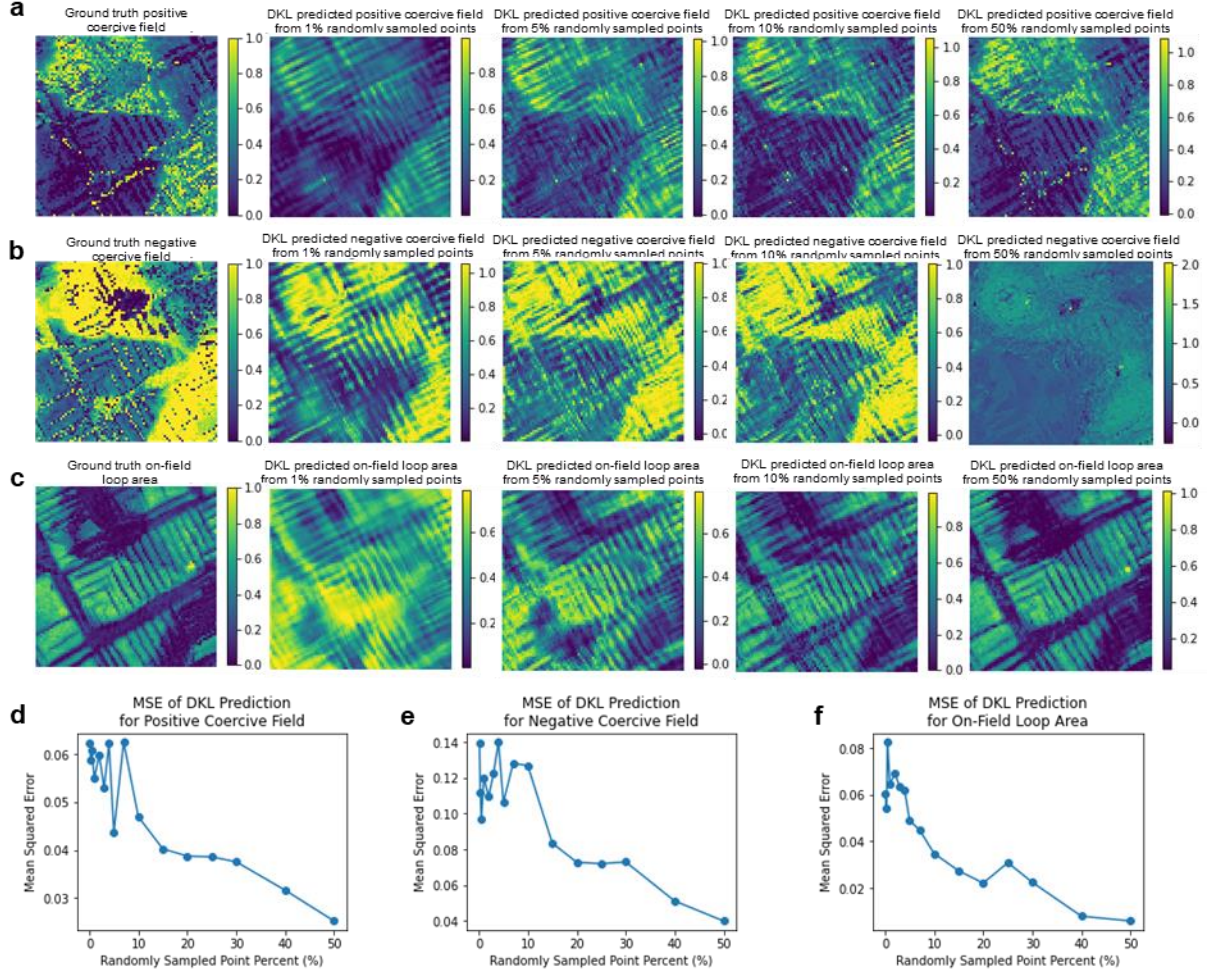


Figure S1. DKL reconstruction based on randomly sampled points. **(a)** ground truth positive coercive field map and DKL reconstruction based on 1%, 5%, 10 %, and 50% of randomly sampled data. **(b)** ground truth negative coercive field map and DKL reconstruction based on 1%, 5%, 10 %, and 50% of randomly sampled data. **(c)** ground truth on-field hysteresis loop area map and DKL reconstructed loop width maps based on 1%, 5%, 10 %, and 50% of randomly sampled data. **(d-f)** DKL reconstruction error of positive coercive field map, negative coercive field map, and on-field loop area map, respectively. Note that Supplementary Videos S1-S5 show more details of DKL reconstructions based on variable randomly samples points.