



Supplement of

Deep clustering in subglacial radar reflectance reveals subglacial lakes

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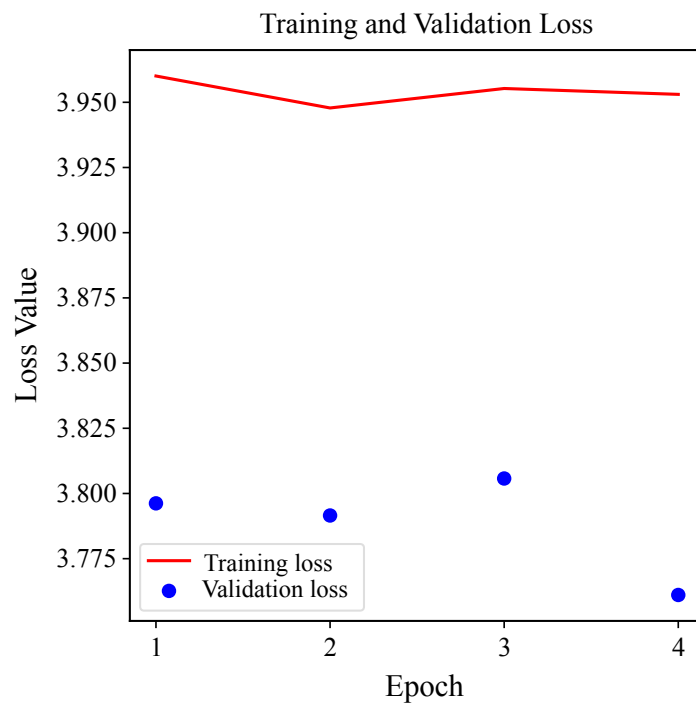


Figure S1. The loss changes curves in the training and validation datasets by epochs for VAE.

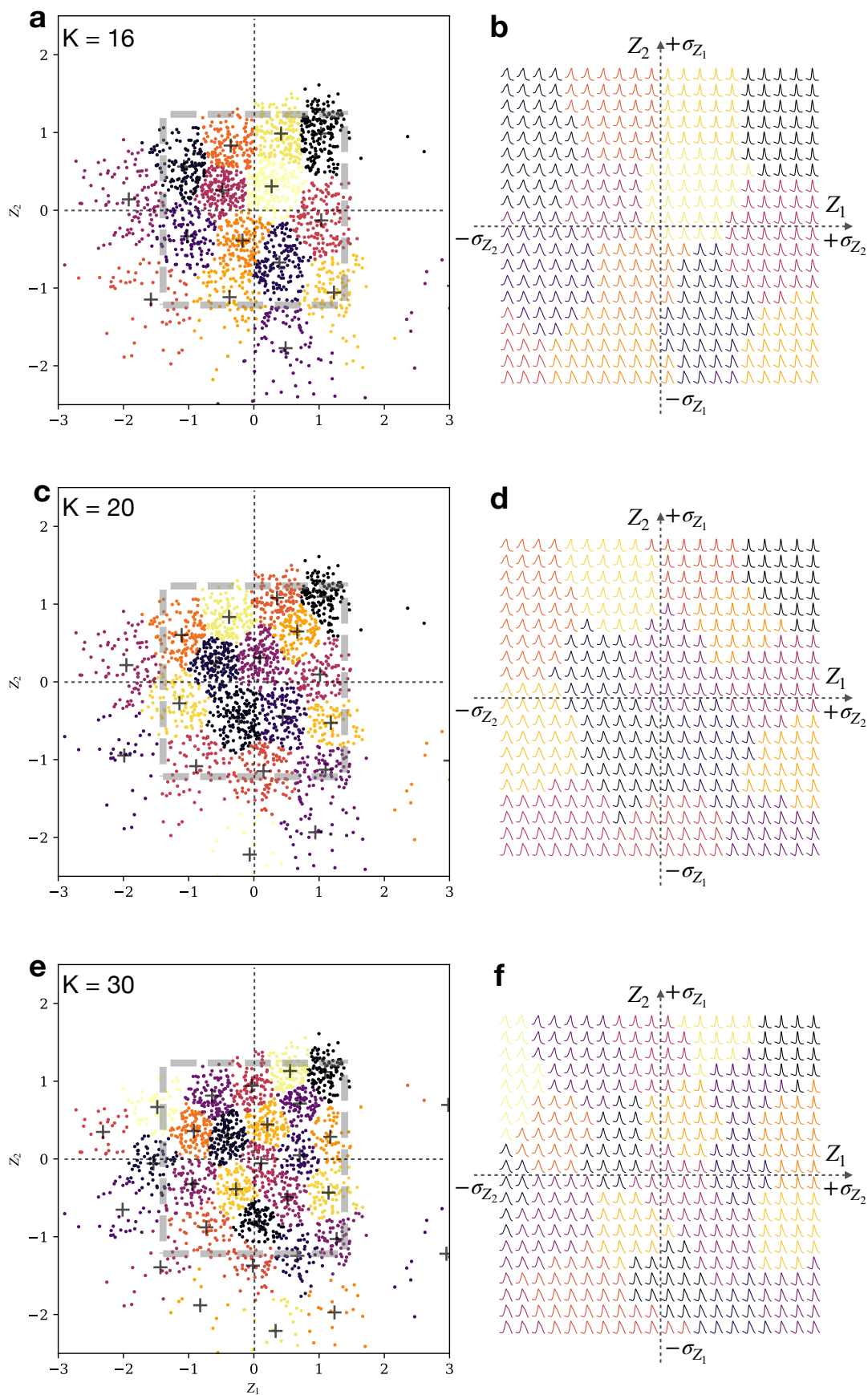


Figure S2. Latent space distributions of various classes of encoded reflector samples and synthetic ice bottom reflectors from virtual vectors when different values of K are applied in latent space clustering (when K is smaller than 15). The markers, legends, and labels in each line remain consistent with Figure 3. (a-b) $K = 8$; (c-d) $K = 11$; (e-f) $K = 14$.

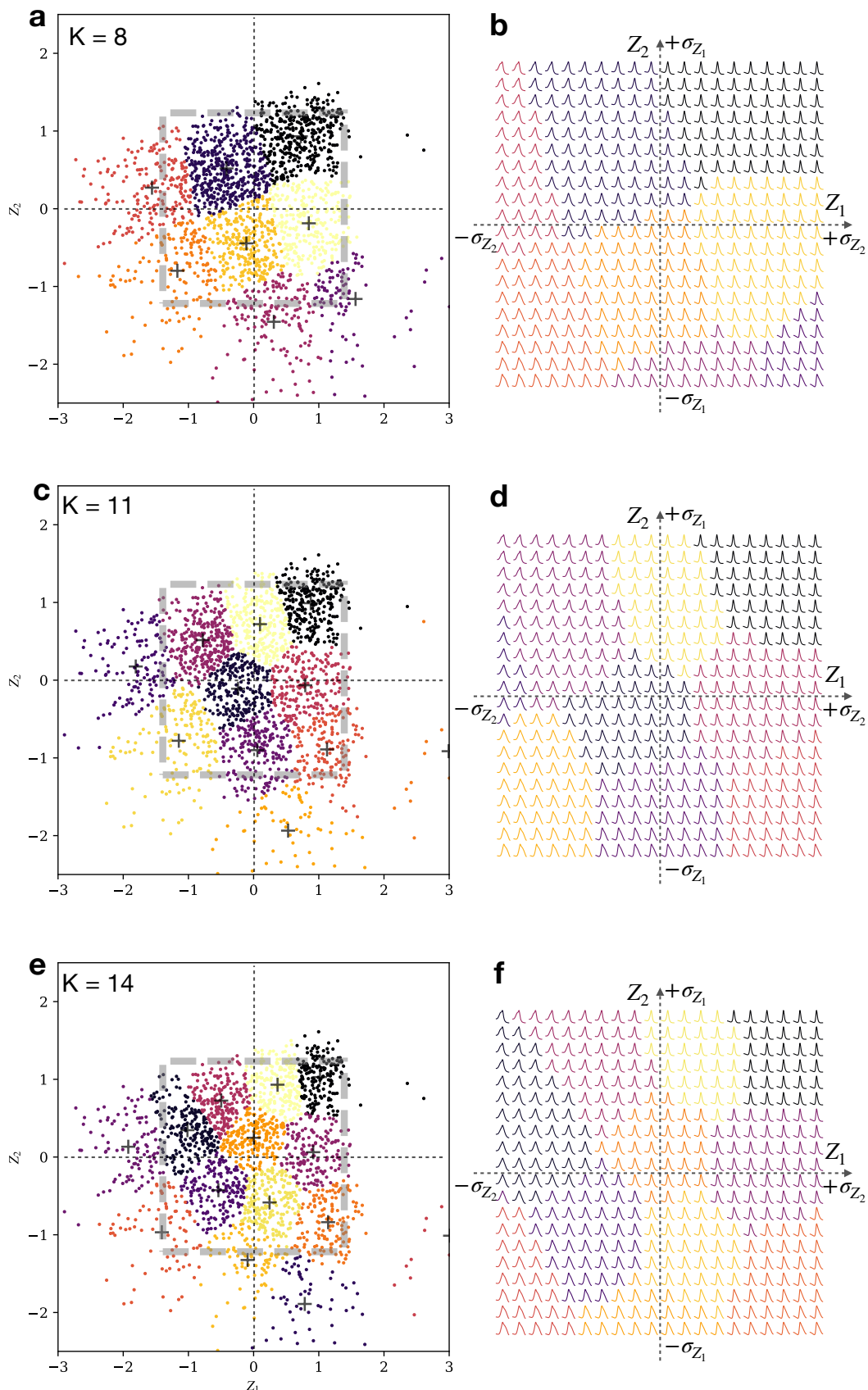


Figure S3. Latent space distributions of various classes of encoded reflector samples and synthetic ice bottom reflectors from virtual vectors when different values of K are applied in latent space clustering (when K is larger than 15). The markers, legends, and labels in each line remain consistent with Figure 3. (a-b) $K = 16$; (c-d) $K = 20$; (e-f) $K = 30$.

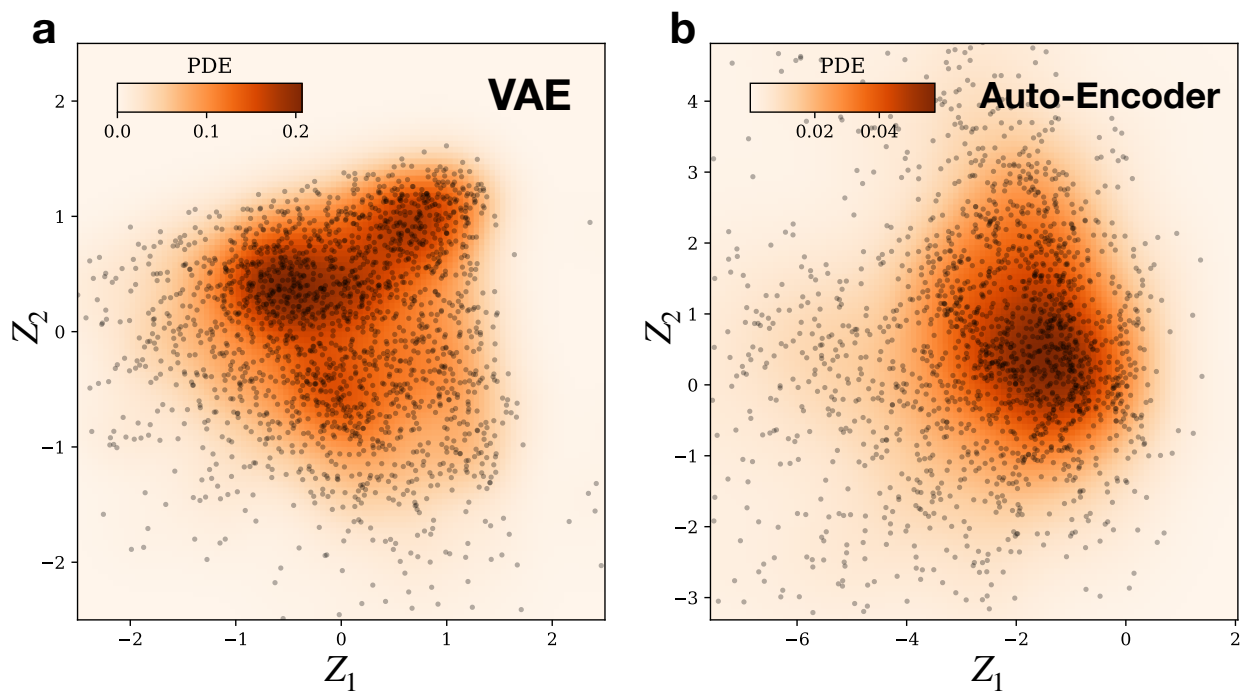


Figure S4. Sample distributions and the corresponding 2-D probability density estimations (PDEs) in Latent Spaces of VAE (a) and Auto-Encoder without variational layers (b).