COMOD
Coordenação de Modelagem Computacional

Relatório de Atividades

Servidor: Marcio Borges

Petrópolis-RJ
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1 INTRODUTION

[Kingma and Welling](#) (2022) introduced the variational auto-encoding, a stochastic inference and learning algorithm.

[Higgins et al.](#) (2016)

2 ZHANG ET AL. (2022)

Variational auto-encoder (VAE) model is a generative network based on variational Bayes (VB) inference proposed by [Kingma and Welling](#) (2014).

[Zhang et al.](#) (2022) proposed a method to reconstruct porous media based on VAE and Fisher information with good quality and efficiency.

Consider the input data $\mathbb{X} = \left\{ \boldsymbol{x}^{(i)} \right\}_{i=1}^{\mathsf{N}}$ consisting of N *i*ndependent and *i*dentically *d*istributed (*i.i.d.*) samples of the continuous (or discrete) variable $\boldsymbol{x}$.
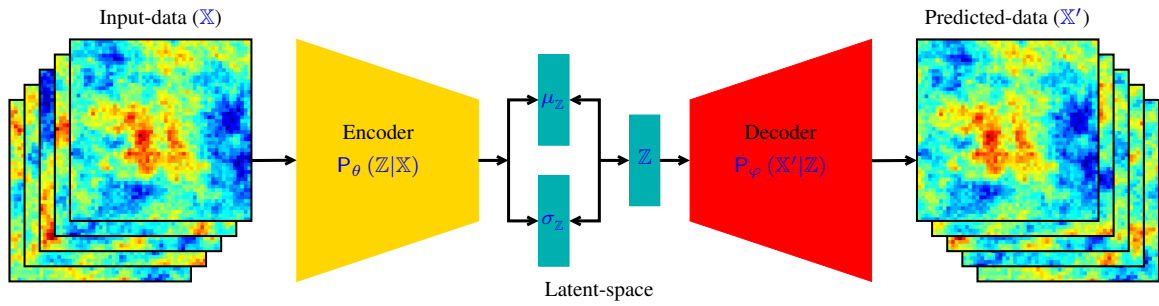
$$\mathbb{Z} = \mu_{\mathbb{Z}} + \sigma_{\mathbb{Z}} \cdot \varepsilon, \quad \text{where} \quad \varepsilon \sim \mathbb{N}(0, 1) \tag{1}$$

REFERENCES

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