

COMODCoordenação de Modelagem Computacional

Relatório de Atividades

Servidor: Marcio Borges

Petrópolis-RJ August 21, 2023

1 Introdution

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

 \mathbb{X}

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.

REFERENCES

REFERENCES

Irina Higgins, Loïc Matthey, Arka Pal, Christopher P. Burgess, Xavier Glorot, Matthew M. Botvinick, Shakir Mohamed, and Alexander Lerchner. beta-vae: Learning basic visual concepts with a constrained variational framework. In *International Conference on Learning Representations*, 2016.

Diederik P Kingma and Max Welling. Auto-encoding variational bayes. In *International conference on learning representations*, pages 14–27, 2014.

Diederik P Kingma and Max Welling. Auto-encoding variational bayes, 2022.

Ting Zhang, Tu Hongyan, Xia Pengfei, and Du Yi. Reconstruction of porous media using an information variational auto-encoder. *Transport in Porous Media*, 143(2):271–295, 2022. doi: 10.1007/s11242-022-01769-5. URL https://doi.org/10.1007/s11242-022-01769-5.