Algorithm 1: WGAN for stochastic process. The default values $\alpha = 0.00005, c = 0.01, n_{\text{critic}} = 5$

Input: x, The geometric brownian motion paths. z, noise data. D, discriminator, G, generator, ℓ, loss function, m, number of training data, θ_0, initial critic parameters, w_0, initial generator parameters.

while $||\ell(D)^2 + \ell(G)^2|| > \varepsilon$ **do**

  for $i = 0, \ldots, N$ **do**

    for $j = 0, \ldots, n_{critic}$ **do**

      $D_w \leftarrow \bigtriangledown_w \frac{1}{M}[\sum_{k=1}^{M} D_w(x_k^{(i)}) - \sum_{k=1}^{M} G(z^{(i)})]$

      $w \leftarrow +\alpha * RMSProp(w, D_w)$

      $w \leftarrow \text{clip}(w, -c, c)$

    end for

    $G_\theta \leftarrow \bigtriangledown_\theta \frac{1}{M}[\sum_{k=1}^{M} D_\theta(z_k^{(i)})]$ $\theta \leftarrow +\alpha * \text{RMSProp}(\theta, D_\theta)$

  end for

end while