

Brownian Motion Monte Carlo

Brownian Motion Preliminaries

lemma[Time reversal property of Brownian motions] Let  $T \in \mathbb{R}$ ,  $t \in [0, T]$ , and  $d \in \mathbb{N}$ . Let  $(\Omega, \mathcal{F}, P)$  be a probability space. Let  $W_t : [0, T] \times \Omega \rightarrow \mathbb{R}^d$  be a standard Brownian motion. Let  $W = W_{T-t} - W_t$ . Then  $W_s = \{W_s : s \in [t, T]\}$  is also a standard Brownian motion on  $[0, T]$ .