Standard Notations

If you come across something that isn't in the list that is likely to come up, add it and post the document on slack/GitHub again so we're all aware of the update.

Put notes or things that need to be changed inside plus signs so that Ctrl+F can be used to find. E.g. +++ Insert reference to foo here +++ . Also allows you to highlight uncertain areas for other people to check.

Diffusion	X_t
Brownian Motion/Wiener Process	W_t
Potential	$U : \mathbb{R}^d \to \mathbb{R}$
Random Variables	Uppercase math font e.g. X, Y, Z
Normalisation Constant	mathcal Z i.e. $\mathcal{Z}$
Iteration	X_k
Step Size	h
Taming Function	T
Stationary/Target/ True distribution	π
Normal random variables	Z
Minimum function	$\wedge$ i.e. $\min\{t, s\} = t \wedge s$
Maximum function	$\vee$ i.e. $\max\{t, s\} = t \vee s$
Dimension	d
Proposed step	Y
Lipschitz constant	L
Strong convexity constant	m
Number of iterations	N
Startpoint	$X_0 = x_0$

The first ten are Langevin Monte Carlo (LMC) algorithms. Try and drop superscript where possible, it is ugly.

Algorithm	**Name**	**Stationary Distribution**
Unadjusted Langevin Algorithm	`ULA`	$\pi_\gamma^{\mathrm{ULA}}$
Tamed Unadjusted Langevin Algorithm	`tULA`	$\pi_\gamma^{\mathrm{tULA}}$
Coordinatewise Tamed Unadjusted Langevin Algorithm	`tULAc`	$\pi_\gamma^{\mathrm{tULAc}}$
Metropolis Adjusted Langevin Algorithm	`MALA`	$\pi_\gamma^{\mathrm{MALA}}$
Tamed Metropolis Adjusted Langevin Algorithm	`tMALA`	$\pi_\gamma^{\mathrm{tMALA}}$
Coordinatewise Tamed Metropolis Adjusted Langevin Algorithm	`tMALAc`	$\pi_\gamma^{\mathrm{tMALAc}}$
Metropolis Adjusted Langevin Truncated Algorithm	`MALTA`	$\pi_\gamma^{\mathrm{MALTA}}$
Higher Order Langevin Algorithm	`HOLA`	$\pi_\gamma^{\mathrm{HOLA}}$
Tamed Higher Order Langevin Algorithm	`tHOLA`	$\pi_\gamma^{\mathrm{tHOLA}}$
Coordinatewise Tamed Higher Order Langevin Algorithm	`tHOLAc`	$\pi_\gamma^{\mathrm{tHOLAc}}$
Leimkuhler-Matthews Algorithm	`LM`	π_γ^{LM}
Tamed Leimkuhler-Matthews Algorithm	`tLM`	$\pi_\gamma^{\mathrm{tLM}}$
Coordinatewise Tamed Leimkuhler-Matthews Algorithm	`tLMc`	$\pi_\gamma^{\mathrm{tLMc}}$
Random Walk Metropolis Algorithm	`RWM`	$\pi_\gamma^{\mathrm{RWM}}$